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THE ARCHITECTURAL REVIEW

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The War and Building

The year 1918 must see the war won for World Democracy, and every American worthy the name will support the Government with all his heart, mind, soul, and strength.

But the vast majority of the people are not needed for direct war activities, and must show their patriotism in some other way. For them, the only other way is to support generously those who do directly prepare for and carry on the war. Without such support, all war activities would utterly fail for want of material and money.

Hence, the essential patriotism of fully 90,000,000 of Americans is to pursue their usual daily avocations and businesses with the utmost energy, so as to create the material and earn the money needed by our war leaders. The more normal and active business, as a whole, can be kept, the more fully the country will be able to support successfully that "pomp and circumstance of glorious war" into which we are now plunged. The more disturbed and abnormal business becomes, the less able the country will be to meet its stern obligations at the international front.

Disturbance and dislocation, to an extent, there must be, and this will necessitate certain readjustments; but the great every-day world of men and affairs must go on, war or no war, in much its usual way, with all the infinitely complex activities that characterize human life from the cradle to the grave.

It is these complex activities that constitute for the most part the business of the world, and upon them all people, from puling infancy to doddering age, depend for their daily necessities, comforts, and luxuries.

As absolutely essential as it is to prepare for and prosecute the war with "vigor and rigor," it is as absolutely essential to maintain the body, social, economic, industrial, and financial, in its normal healthy condition; and that can only be done by keeping every one at work to produce what every one else needs, thus earning to buy what every one else produces.

In the great building industry of the country, with its billions of annual expenditure, there is a possible element of unnecessary pretentious building that may be postponed to more propitious times; and the architect and the material man will suffer accordingly. But so far as the architect is concerned, he ought to make it clear to his future clients that all the planning and designing for such luxury building can be done to best advantage now, so that, when the time comes for action, as it surely will at no distant future, there will be no irritating and costly delays, due to the abnormal rush of building activity which must inevitably follow the close of the war.

So far as the material man is concerned, he should make it clear to his prospects that waiting for prices to fall after the war closes is a snare and a delusion. With many of the building materials, the prices have not kept up with their cost of production, of which labor constitutes more than 90%. And the labor scale is not going to descend appreciably when the war is over. All normal and needed building can be done now to far better advantage than in the hurry and congestion of post war times, when buildings will be in great demand.

Besides, as a steadying industrial influence, building gives remunerative work to more different kinds of professions and trades than any other single industry. Every building erected results, at one and the same time, in creating fixed values and distributing fluid capital. An abnormal restriction or disturbance of building activities would be fraught with serious consequences to the community as a whole.

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The Architectural Review

Volume VI (Old Series, Vol. XXIII) January, 1918 — Number 1

"The Highlands," Skippack Pike, above Ft. Washington, Pa.

By C. A. Ziegler

THIS excellent example of the late Georgian period of Colonial architecture, possessing many unusual features, is yet almost unknown to architectural students. Situated on the Skippack Pike, about one mile above Fort Washington, Pa., and overlooking the beautiful Whitemarsh Valley, this estate has been little affected by the march of progress, perhaps because the property has had only three owners since its erection one hundred and twenty years ago.

The house was built in 1796 by Anthony Morris, a merchant of Philadelphia, speaker of the State Senate, who sold the property in 1808. It came into the possession of Mr. George Sheaff in 1813, and was occupied by his son, Mr. John D. T. Sheaff, until last year, when he died, at ninety-six years of age.

Entrance-Porch and Base of Corner Marble Pilasters

Other than a frame addition at the rear, the property remains in its original condition, and offers an opportunity to study a gentleman's estate of the early days of the Republic. The house is quite pretentious, more elaborate than either "Stenton" or "Wyck" on the exterior, although all the interior wood-

The House from the Driveway Approach

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The Spring-House by the Lake

The Trellised Entrance to the Garden

work is very much simplified, the paneled walls being conspicuously absent. The rooms and halls, however, are of noble proportions, and had the original mantels not been replaced by the marble mantels of the early eighties the rooms would still be most impressive. The front is laid up of dressed stone, with carefully cut stone pilasters with Ionic caps, supporting a pediment after the old manner.

The main doorway, with its well-designed porch and railing, — a splendid example of Colonial ironwork, rather oddly built *outside* the porch columns, — forms a charming entrance, possessing that welcoming aspect we somehow always associate with these fine old Colonial doorways.

Surrounded by great oaks and pine trees, as the visitor approaches up the winding lane, the house expresses a feeling of combined refinement and dignity; and as one obtains a view of the garden from the driveway, through the old-fashioned arbor, the atmosphere of bygone and vanished days is again recreated.

This relic of Colonial days seems new compared with the bole of this ancient oak

The Living-Porch is elevated to give light to the kitchen, which is situated in the basement

In visiting most Colonial houses one generally finds the buildings and grounds so much changed it is difficult to visualize their old aspect, but at the "Highlands" the garden and grounds practically retain their original condition, in so far as the plan is concerned. From the orangery, arbors, walks, box hedges, etc., that remain, one need tax the imagination but very slightly to enjoy the experience of walking again in one of the charming old-fashioned Colonial gardens about which so much has been written.

The "Business" of Architecture

Part IV. Section 1

By Daniel Paul Higgins

The publication of this important series of articles on "The 'Business' of Architecture," of which the first installments were contained in our last four issues for 1916,—to which our readers are referred,—is herewith resumed. This article will be continued in the February and March numbers, where the detailed explanation and illustration of further details of such an organization as is here proposed will be taken up. This installment deals with the necessary bases by which a small must be changed to a larger practice.

THERE is nothing in the world worth while that is not moved by good method. The real things being done in architecture by real architects are more interesting and more wonderful than the fiction of libraries and the make-believes of the stage. They cannot be told in one article or one book, and they all fit together to make a drama which is being played day by day before our very eyes.

Every architect is in the cast and some have speaking parts, although the vast majority go to make up the chorus or the mob. The stars stand out preëminently — and why? Because their general qualifications — of which business and method play a large part — go to make for greater efficiency as well as to instil confidence in them on the part of the public.

The word "Business," unfortunately, brings to the minds of many architects the picture of an inchoate mass of complex details and red tape, an undigested hodge-podge of figures, requiring the most painstaking analysis to understand or bring out their true meaning.

There is, however, a science of business organization, already in operation in the offices of several progressive architects, that, where used, has brought results to which these criticisms do not apply. It is the misapplication of the term that has brought it into such disrepute — and the present development of American building requirements demands, as never before, scientific and efficient business organization.

A "business organization" is the machine by means of which all the other forces of architecture and building are made effective. An efficient organization, like a good machine, must work with a minimum loss of energy. Every pound of steam that is uselessly dissipated must detract from the efficiency of the engine as a means of transport. The power that is to be directed and used for progress by means of the locomotive engine should not be spent in carrying superfluous machinery and fuel, nor in climbing unnecessary grades. Likewise, a business organization which is to assist and direct the other forces of an architect's practice should not cause nor permit any dissipation of energy. Many a practice conducted haphazardly is, in the absence of proper business methods and specialization of function, wasting energy which should be conserved and realized in the form of direct profits.

Methods and system necessary to meet the modern requirements of American business have changed so rapidly that many architects have trouble in keeping abreast of the times. The methods of today succeed only to go into the discard of tomorrow. The crackle of "exploded" methods put out of commission by new demands is as continuous as the roar of artillery upon the battlefields of Europe. The individual architect, competing with one who has just made the change, must also change, or he will find himself hopelessly in the rear.

The "Business of Architecture," like any other business, needs to be kept constantly laundered — in exactly the same sense as a shirt. Fresh ideas are necessary and needed, just as the arteries of the body continually need fresh blood.

One of the most common defects in many architects' organizations is to accept the superannuated notion of placing an individual in complete charge of all functions, with the title of "Business Manager," whose training invariably is along practical lines only, with little or no real technique. In most cases the scope of his work is construed to be to attend to clients' requirements, supervise business details and routine, oversee the making of drawings, write specifications, superintend construction, etc.

There are many dangers possible from the system where all functions are autocratically controlled by an individual whose training and knowledge are solely along the lines of his specialty. In many offices where this system exists, architectural merit, business, and other important factors are made subordinate to the manager's particular interest and sympathies.

You will call to mind many architects who, in an effort to shift the responsibility of the details of their practice, have vested full control of their organization in a so-called "Manager," who in most cases has been trained as a building superintendent, with little or no appreciation for the centralization or development of a consistent design or business policy. Lacking in designing knowledge himself, his appointments of designers are injudiciously made, and his supervision and interest in this direction are superficial and haphazard. In the absence of proper directions, designers are free to experiment and develop many different styles; and the manager's far-reaching authority often permits him even to interfere with the essential quality of design, merely in order to effect some sort of economy in the construction of the building. Changes thus made by him are often with no regard whatever for the effect that may react upon the design, as the latter is entirely secondary to his own particular sympathies and interests.

It is generally conceded that good construction is good design; and as all good design in architecture depends upon correct construction, any arbitrary change in the method of construction naturally interferes with the intention of the design — particularly in the case of half-timber work, where the points of construction form nearly all the interest of the design; where any change, either as regards dimensions or material used, would lead to a totally different interpretation of the work when completed. A manager, with absolute control of the draughting-office as well as the selection of contractors, was appealed to by a firm of wood-workers carrying out some half-timber construction to permit certain changes. The design called for certain lengths and dimensions of timber; the contractor, having no such material on hand, appealed directly to the manager to allow him to utilize material which in no sense corresponded to the dimensions called for, with the result that, when completed, the work was found to be pieced together out of a great number of short lengths, which in the use of ceiling beams and such like construction, reduced this particular effort of the designer to the appearance of a mere amateurish attempt.

A man more trained in design would never have permitted such an alteration from the drawings to be made — particularly as, had he been given an opportunity, the designer could readily have so readjusted his design as to utilize intelligently the material at hand.

The question of selection of contractors more fitted to do certain types of work than others should certainly be taken care of by the manager in consultation with the designer, as it can readily be understood that some men show more qualification than others for certain types of work; and inasmuch as the larger interests of every architect's office depend upon the pursuance of a fixed policy as regards business and the standard of attainment which he has set himself in connection with general design, both are jeopardized or attained precisely in ratio to the degree of intelligence that the general policy of the office shows in the disposition of work which is being carried out. Und[illegible] [illegible]ences, in addit[illegible] to the monetary loss resulting fro[illegible] the unnecessary double

handling of matters, there exists a lack of enthusiastic co-operation, community of interest, and loyalty of all employees, all of which has a disastrous effect on the character of work produced, and both the business and professional reputation of the architect. Under this method, with its lack of proper records and direction, we find men neglecting their work through lack of interest, or we find men wasting time in doing work for which they are not especially fitted or trained.

The determination of what form the accounting reports should take, the matters to be reported upon and the method of reporting, have been left largely in the hands of the so-called "Office Manager"—as stated before, a man generally unfitted by aptitude and training to decide these fundamentals of statistics; when the result will inevitably lead to endless confusion and to the making of many reports where one accurate record would suffice. It is not unusual to find stenographers or boys, without judgment or training, making accounting records upon which later the architect will depend in making decisions affecting far-reaching policies. Or we will find anybody and everybody writing specifications, checking drawings, seeing clients, etc., when the individual in charge is too busy himself or is out of the office.

Again, where this system is in vogue, there is the inevitable dissipation of energy in the mere endeavor of trying to perform different functions, when each one requires special knowledge and training. This system is not unlike the man who prided himself on being in seven different lines of business, while in any one of them he was not doing real business enough to keep a monkey in peanuts; or the man who could converse in nine languages, but had no ideas in any one of them. Under such an administration important functions are conducted indifferently, and seldom is any one function performed supremely well. Specialization of study, ability, and energy has reflected much credit on such men as Burbank, who knows plant life; Burroughs, who knows bird life; Edison, who knows electricity; Wanamaker, who knows merchandise; Ford, who knows a utility auto car; and many other successful specialists. Exactly the same specialization of energy in an architect's organization is essential in order to obtain a successful practice.

To make a success in architecture nowadays requires about equal parts of skill in organization, talent in promotion, art, construction, and financing.

Constructive imagination sees structures before they are tangible. American business today is crammed full of opportunities for architects with constructive imagination to promote and create profitable projects of a meritorious character. Some architects are known for their business and promotion abilities, along with a laxity of artistic perception, while many others are known only for their artistic capabilities and interests. Seldom do we hear of an architect possessing the appreciation of special expert knowledge controlling all the different important functions that go to make up the successful practice of his chosen profession.

We do, however, know a few architects who see the value of combining with the artistic and construction interest a keen business organization. Such men can see the wisdom of employing, within their own organization and in an advisory capacity, the best business talent available, which then coöperates and participates with all the other forces employed in a true and comprehensive way.

It is the transition from the old to the new demand for architects possessing proper organizations, in addition to their artistic qualifications, which brings in the necessity of scientific management to correct and accord the discordant elements that always accompany changes in conditions and methods. As is commonly the case in changes of this character, the men in charge do not outgrow their habits, and attempt to govern new and larger systems by the same means and through the same methods as were found adapted to smaller organizations. But no one man can now get and keep in personal touch with all the details of a fair-sized practice — though it is being attempted. Some good men have cut short their lives in this endeavor, and others have produced confusion and loss through adherence, in larger business opportunities, to those relics of management which are applicable only to small practices.

When the architectural business reaches the point where it is no longer possible to be carried in the mind of one man, there exists a choice between two principal courses. In one — and undoubtedly the exceptional — case the architect can himself continue to oversee and direct the business functions of his office. It is then most essential for him to obtain an able and efficient head for his department of design. The other alternative — and this is undoubtedly the one the greater majority of architects would prefer and follow — would be to desire themselves to continue to keep in sufficiently close touch with the direction of the department of design in their office so as to control its development according to their own ideas — often with the assistance of a qualified designer, who is only subordinate to the architect in such matters. In such a case it is all the more necessary for them so to reorganize their business as to make it possible to place its conduct in the hands of a business manager with a proper knowledge and understanding of his office and its relation to the work of the organization as a whole.

Hence, when the mind at the head of important departments, such as those of Design, Business, and Job Supervision, is of a recognized and special ability, it can carry its specialty to a very profitable end, keeping in personal touch with the smallest details, and can make daily personal observation of any coöperative part necessary to bring complete success to the architect. This specialization of function by men scientifically trained in their specialties permits the architect to be relieved of actual participation in details, and thereby allows him time to secure and promote new work, and to properly attend to and supervise its design. With the aid of exact accounting and other statistical information, he is then placed in the position where he can best control his practice with profit to himself and with satisfaction to his clients.

The welding of these units into a consolidated system by the architect, scientifically assisted by a proper business organization, with all its parts properly coördinated, will then be adequately prepared to furnish the most efficient results in the most economical way.

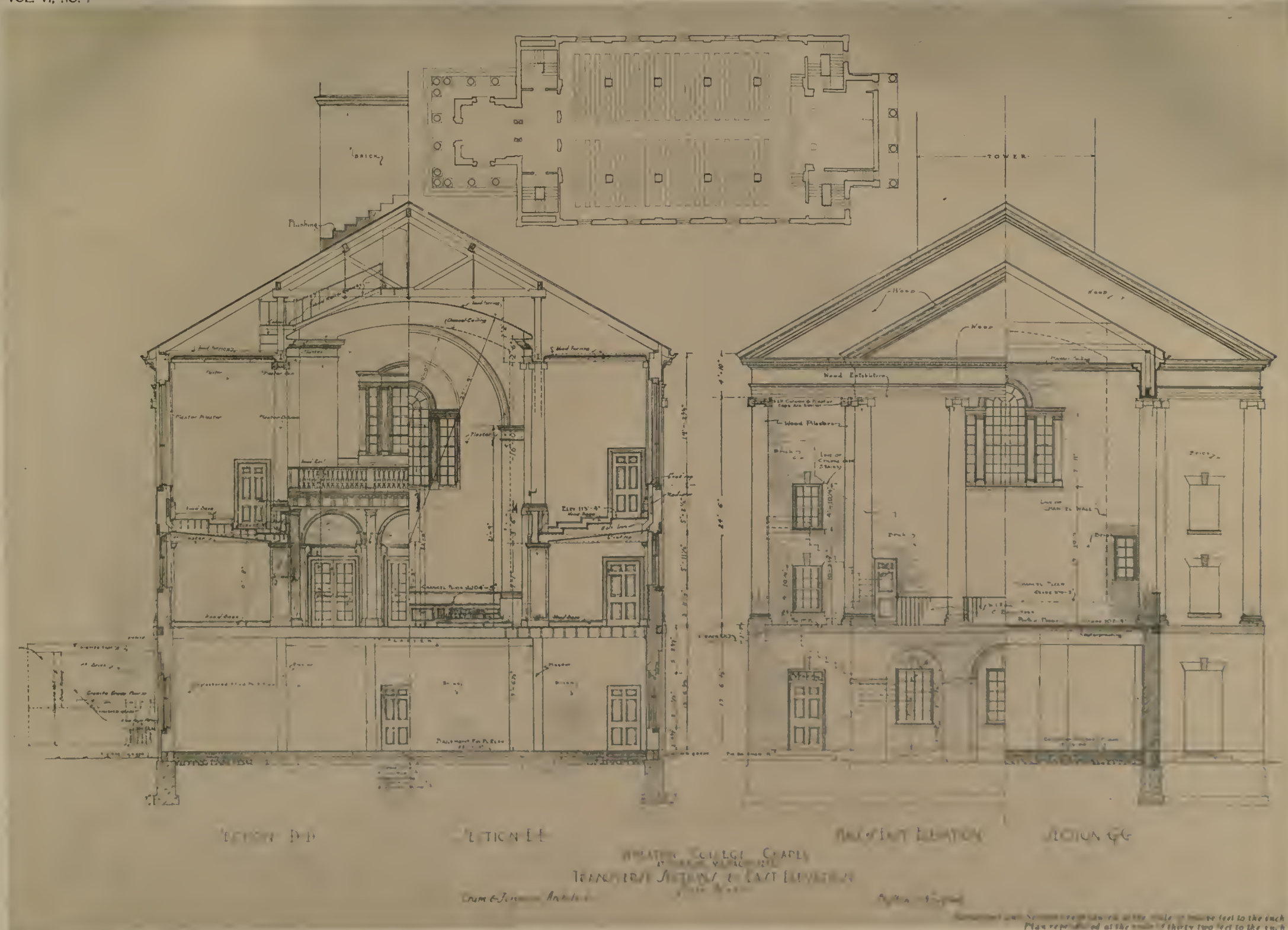
Today the architect with a fair-sized practice needs a better organization, with more accurate knowledge, than did his prototype of twenty years ago; but, unlike him, he must have such knowledge in the form of deductions from large aggregates — not in masses of undigested detail. To place before an architect a mass of detail figures, from which nothing can be obtained without painstaking analyses, is mere wasteful inefficiency. The employee needs to find his own self-interest coincident with the efficiency of his effort, and thus have his loyalty fixed through interest in the success of the system, of which he is a part, in service to the organization as a whole.

These preëminently vital principles can be secured through a means that is totally lacking in a system where all functions are absolutely controlled by one individual subordinate to the architect. That means is — in addition to the application of scientific control to such important functions as Design and Job Supervision —"Business Management," with its statistical science, which has, as fundamentals, three elements: 1 — Scientific records; 2 — Scientific grouping of those records; 3 — Scientific deductions from those groupings.

Under the first element, the heads of Design and Job Supervision may have individual parts, by which to single out the inefficient and uneconomical, so as to exercise continually that control which will improve the record and have its reflex in the second and third elements.

Under the second element the reward of the employee may be fixed, not by an arbitrary fixed rate per hour or day, but in proportion to the results of his efforts.

Under the third element the architect may have accurate knowledge of the laws governing operations, and thus be placed in a position to direct them adequately.



WHEATON COLLEGE CHAPEL, NORTON, MASS.

CRAM & FERGUSON, ARCHITECTS

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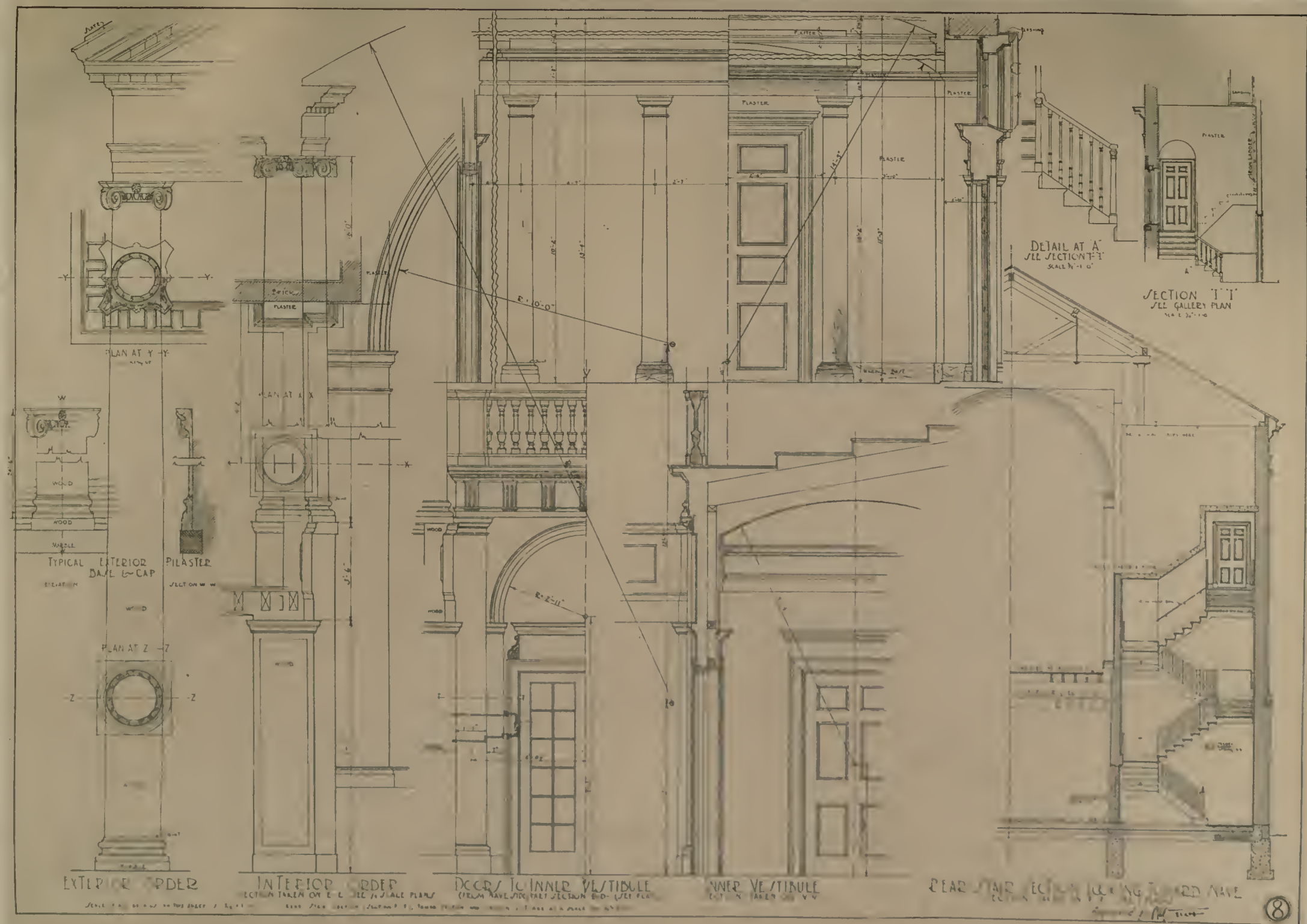

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WHEATON COLLEGE CHAPEL, NORTON, MASS.

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FRONT VIEW

VIEW FROM REAR MEADOWS

PLATE XXXI

THE ARCHITECTURAL REVIEW

WHEATON COLLEGE CHAPEL, NORTON, MASS.

CRAM & FERGUSON, ARCHITECTS

INTERIOR, LOOKING TOWARD ENTRANCE

LOOKING TOWARD CHANCEL FROM BALCONY

PLATE XXXII

THE ARCHITECTURAL REVIEW

WHEATON COLLEGE CHAPEL, NORTON, MASS.

CRAM & FERGUSON, ARCHITECTS

GENERAL VIEW

OLD BRICK CHURCH, PARK STREET, PORTLAND, MAINE

BUILT IN 1828

THE ARCHITECTURAL REVIEW

TOWER FROM SOUTH

UPPER PORTION OF TOWER

PLATE XXV

DETAIL OF THE SPIRE, CHURCH OF LA TRINITÉ, VENDÔME (LOIR ET CHER)

THE ARCHITECTURAL REVIEW

WEST FAÇADE

NAVE FROM ENTRANCE

PLATE XXVI

CHURCH OF LA TRINITÉ, VENDÔME (LOIR ET CHER)

THE ARCHITECTURAL REVIEW

THE ARCHITECTURAL REVIEW

THE EAST FRONT

ALL SAINTS CHURCH, GOODMAYES, ESSEX, ENGLAND

P. K. ALLEN, ARCHITECT

VIEW FROM SOUTHEAST

ALL SAINTS CHURCH, GOODMAYES, ESSEX, ENGLAND

P. K. ALLEN, ARCHITECT

PLATE CII

THE ARCHITECTURAL REVIEW

NAVE, LOOKING EAST

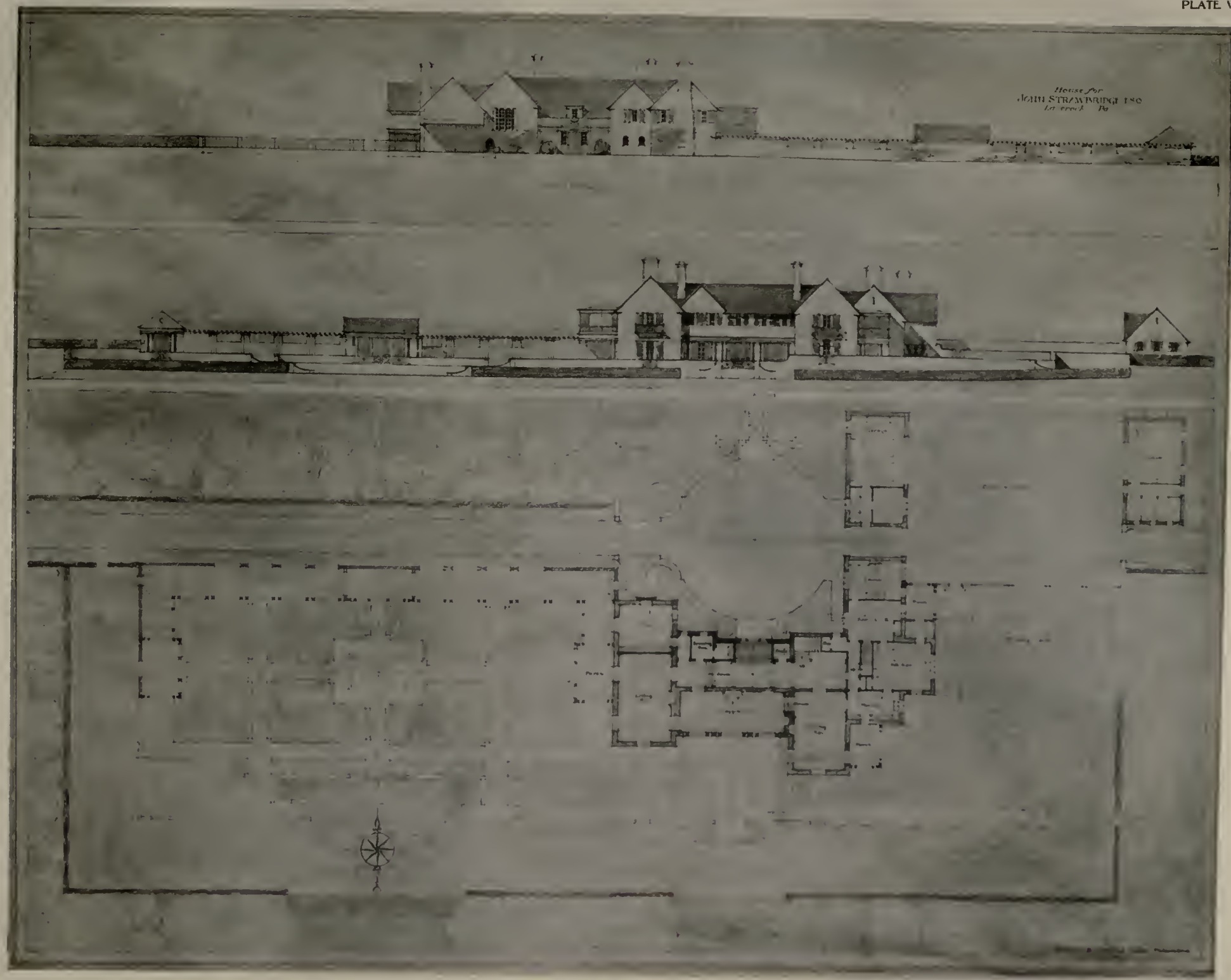
THE SOUTH AISLE

PLATE CIII

ALL SAINTS CHURCH, GOODMAYES, ESSEX, ENGLAND

P. K. ALLEN, ARCHITECT

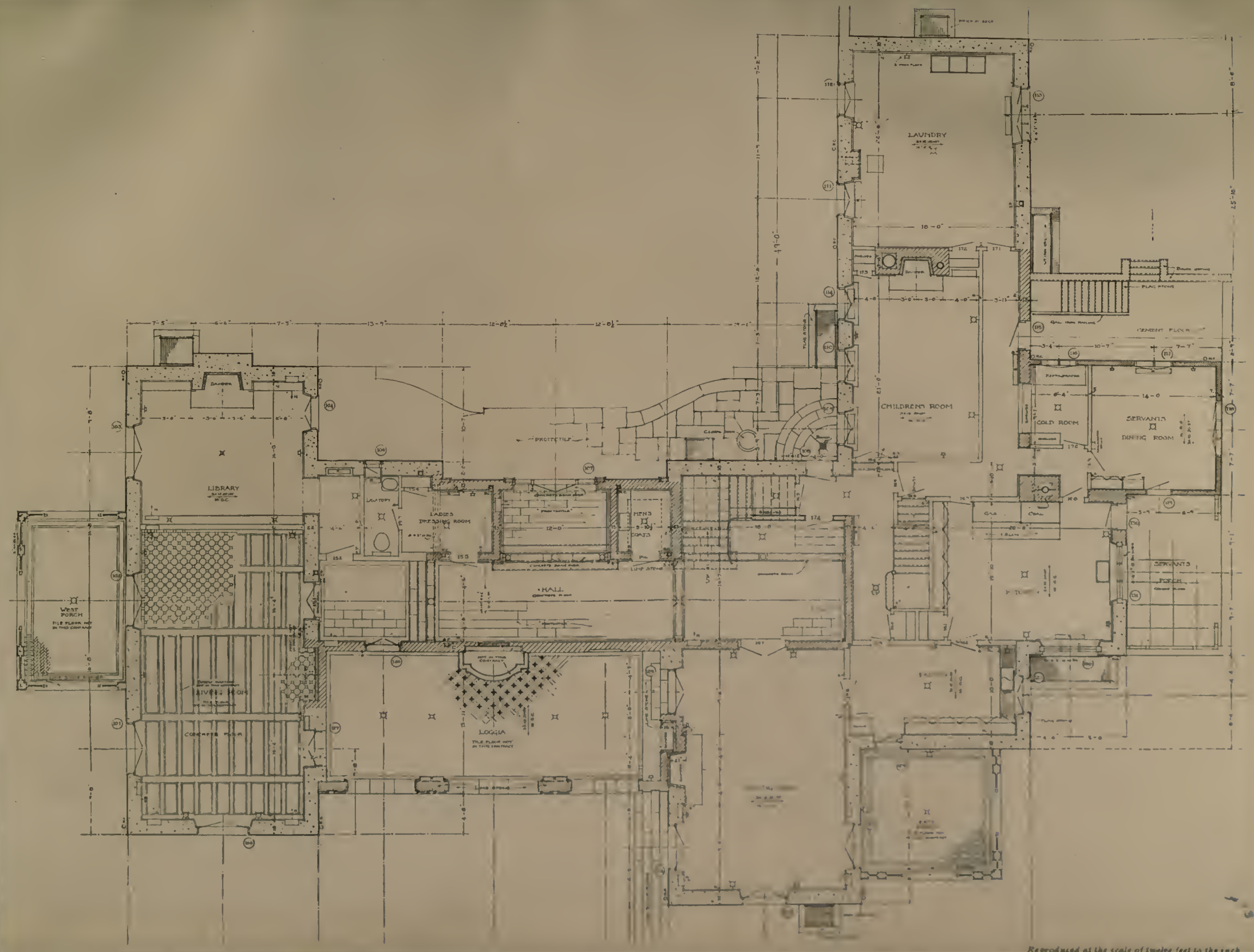
THE ARCHITECTURAL REVIEW



PRELIMINARY STUDY FOR HOUSE AND SURROUNDING LANDSCAPE DEVELOPMENT, FOR JOHN STRAWBRIDGE, ESQ., AT LAVEROCK, PA.

EDMUND B. GILCHRIST, ARCHITECT

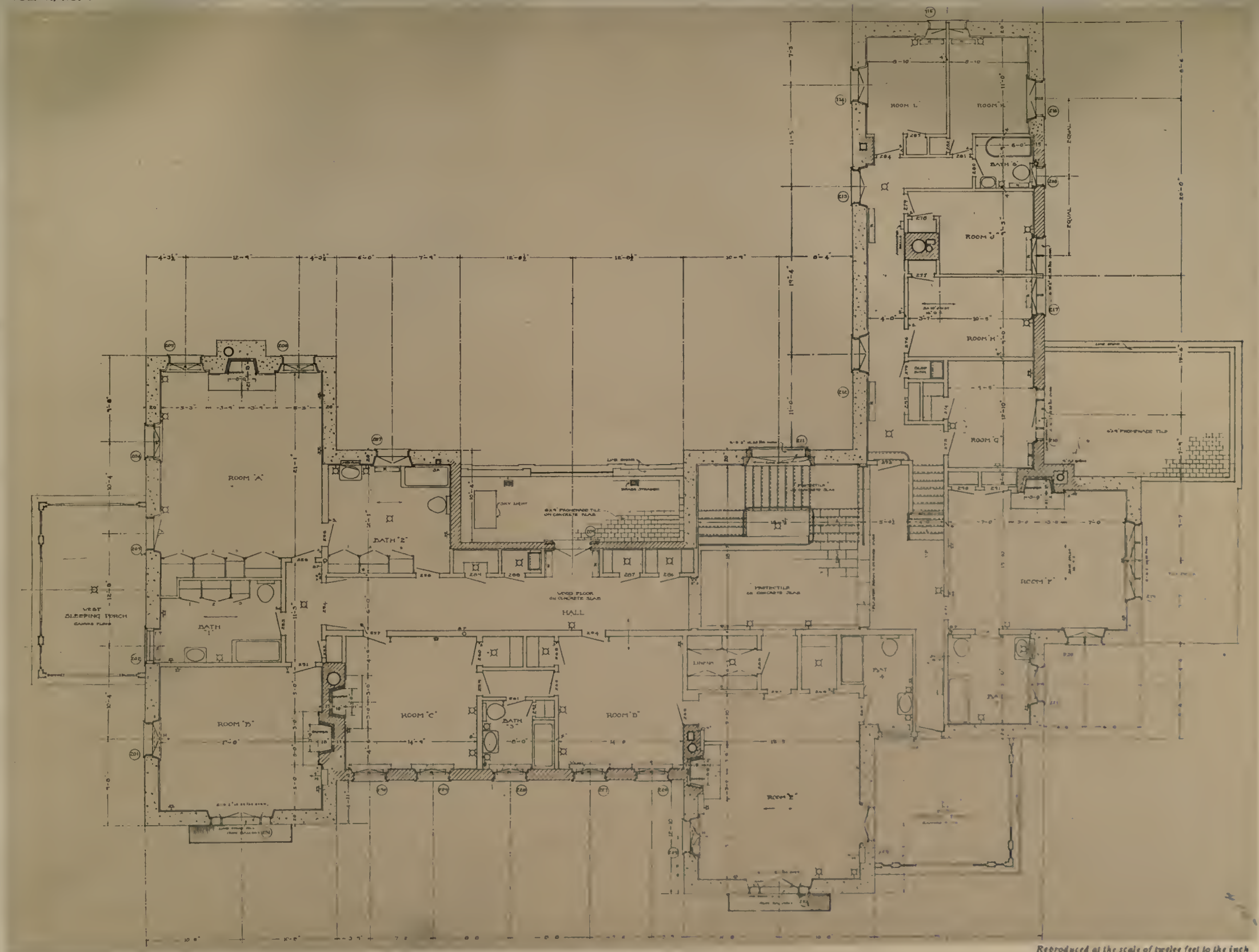
With the exception of a change in the driveway approach and forecourt, consequent on the location of the stable and garage in a separate group on the axis of the entrance façade at a considerable distance to the north note how closely the original idea here contained is developed in full working drawings.



FIRST FLOOR PLAN

HOUSE FOR JOHN STRAWBRIDGE, ESQ., LAVEROCK, PA.

EDMUND B. GILCHRIST, ARCHITECT



Reproduced at the scale of twelve feet to the inch

SECOND FLOOR PLAN

HOUSE FOR JOHN STRAWBRIDGE, ESQ., LAVEROCK, PA.

EDMUND B. GILCHRIST, ARCHITECT

¼" SECTION THROUGH 1ST FLOOR HALL

Elevations reproduced at the scale of sixteen feet to the inch
Section reproduced at the scale of eight feet to the inch

ELEVATIONS AND SECTION

HOUSE FOR JOHN STRAWBRIDGE, ESQ., LAVEROCK, PA.

EDMUND B. GILCHRIST, ARCHITECT

Elevations reproduced at the scale of sixteen feet to the inch
Section at top reproduced at the scale of twelve feet to the inch

HOUSE FOR JOHN STRAWBRIDGE, ESQ., LAVEROCK, PA.

EDMUND B. GILCHRIST, ARCHITECT

ENTRANCE FRONT

VIEW OF REAR, TAKEN FROM ACROSS THE POOL

THE CHÂTEAU AT DAUBEUF, (SEINE INFÉRIEURE)

THE ARCHITECTURAL REVIEW

VIEW FROM STREET

ENTRANCE FRONT

PLATE CXXV

HOUSE FOR EDWARD T. CHAPIN, ESQ., DULUTH, MINN.

ARTHUR A. STARIN, ARCHITECT

THE ARCHITECTURAL REVIEW

GENERAL VIEW

DETAIL, FRONT ENTRANCE

PLATE CXLIV

THE ARCHITECTURAL REVIEW

COTTAGE ON ESTATE OF GEORGE ARENTS, JR., ESQ., RYE, N. Y.

LEWIS COLT ALBRO, ARCHITECT

FRONT VIEW

ENTRANCE APPROACH

PLATE CXLV

THE ARCHITECTURAL REVIEW

"MEADOW FARM," ALTERATIONS TO HOUSE FOR EDWARD L. YOUNG, ESQ., GLEN COVE, L. I.

DAVIS, McGRATH & KIESSLING, ARCHITECTS

REAR VIEW

FRONT, SHOWING SERVICE END

PLATE CXLVI

THE ARCHITECTURAL REVIEW

"MEADOW FARM," ALTERATIONS TO HOUSE FOR EDWARD L. YOUNG, ESQ., GLEN COVE, L. I.

DAVIS, McGRATH & KIESSLING, ARCHITECTS

DINING ROOM

LIVING ROOM

PLATE CXLVII

THE ARCHITECTURAL REVIEW

"MEADOW FARM," ALTERATIONS TO HOUSE FOR EDWARD L. YOUNG, ESQ., GLEN COVE, L. I.

DAVIS, McGRATH & KIESSLING, ARCHITECTS

SECOND FLOOR HALL

SUN ROOM

PLATE CXLVIII

THE ARCHITECTURAL REVIEW

"MEADOW FARM," ALTERATIONS TO HOUSE FOR EDWARD L. YOUNG, ESQ., GLEN COVE, L. I.

DAVIS, McGRATH & KIESSLING, ARCHITECTS

OWNER'S BEDROOM

OWNER'S BEDROOM

PLATE CXLIX

THE ARCHITECTURAL REVIEW

"MEADOW FARM," ALTERATIONS TO HOUSE FOR EDWARD L. YOUNG, ESQ., GLEN COVE, L. I.

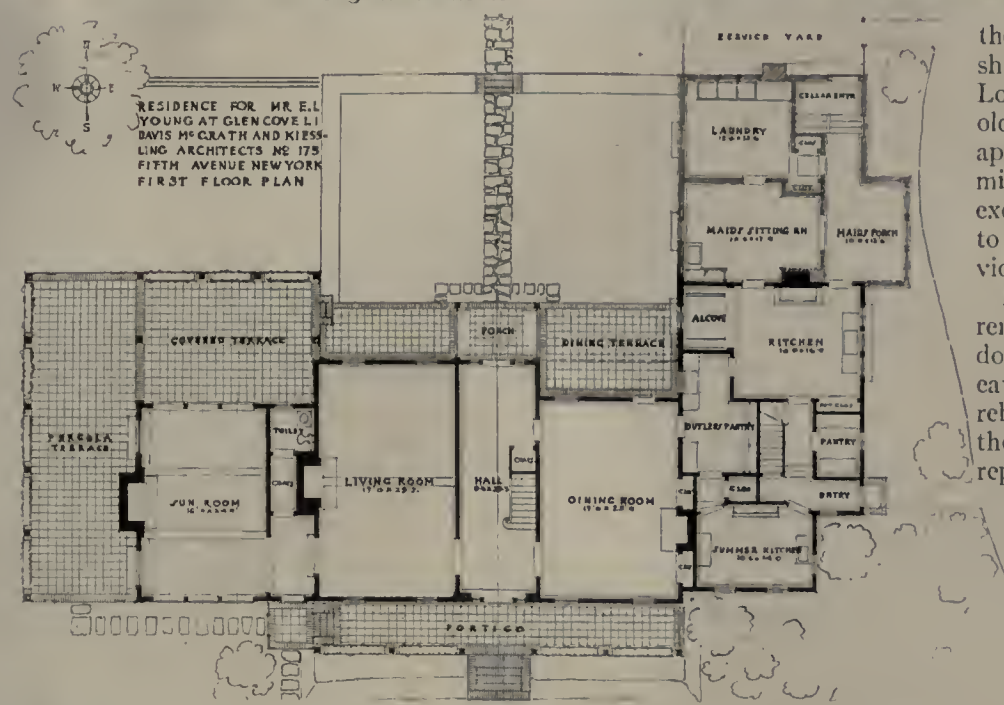
DAVIS, McGRATH & KIESSLING, ARCHITECTS

A House Alteration at Glen Cove, L. I.

Davis, McGrath & Kiessling, Architects

The Original Farmhouse

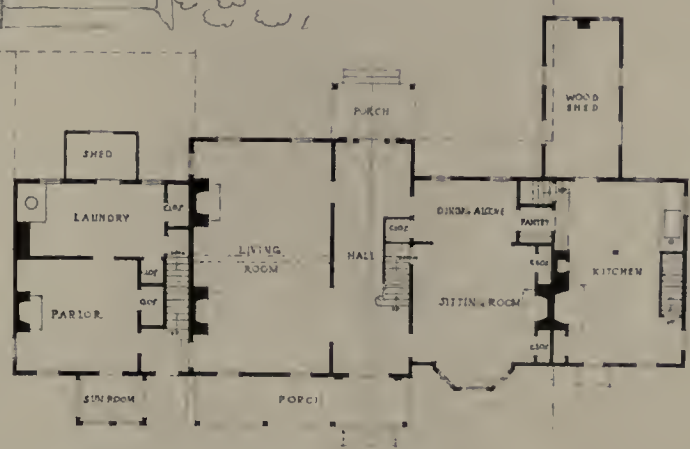
The Old Front and Service End



IN this particular alteration problem — and please note that *all* alteration problems are both "particular" and "individual!" — there was involved a client with a family accustomed to sumptuous apartment surroundings such as are found in New York in the upper seventies, West Side. Obtaining a country abode for eight months of the year involved moving into a much smaller apartment in the middle sixties, East Side — and a complicated re-distribution of a large amount of luxurious furniture and fittings between the two places. The incompatibility of this sort of furniture with the uneven floors and the cracked plaster, natural to loosely constructed exterior walls and sagging floors, immediately becomes obvious. It was apparent from the beginning that a thorough reconstruction of the old structure, and the elimination of gilt finish and silk damask covering carved walnut furniture, was imperative. The latter, left natural and re-covered with made-to-order tapestry, became harmoniously possible — once the house itself was tuned up to an appropriately higher pitch.

After much expenditure of time and gasoline, the place itself was discovered — at an hour's motor distance from New York. A couple of hundred feet back from the highway stood a long, homely, gray painted shingled farmhouse of the familiar postgraduate Long Island type, — a combination of a century old original, partially revamped and brought appropriately *down* to date somewhere in the middle seventies. The inside boasted of no heat except coal stoves, while an old hand pump attached to an antique cistern under the kitchen floor provided the entire outfit of plumbing!

All the traditions of the middle seventies were removed, including piazzas, bay windows, front door, scalloped edge black slate roof, and heavy eaves and gable rakes. All the chimneys were rebuilt, the plaster and shingles removed (yes, the studs — some of them — *were* retained!) and replaced — mixed with new cypress ones, laid ten inches to the weather. Old floors were taken up, and rebuilt to carry new wide oak plank, with rosewood splines; the new walls were lined with muslin, painted and glazed a warm gray, for a background to the hangings, — and the owner is so pleased he is going to make considerable further additions in the Spring!



The Floor Plans, Old and New *Scale of twenty-four feet to the inch*

"Ruislip Manor"

A Typical English Housing Suburb and Its Development

By Frank Chouteau Brown

"RUISLIP MANOR" is situated in an old-world village belonging to Our Lady of St. Nicholas, of King's College, Cambridge, situated at Northwood and Ruislip, Middlesex, and comprising a total of thirteen hundred acres of beautifully situated land, including two large woods, with its highest point about three hundred feet above sea-level. It is reached by five railway stations, varying in time from thirteen to about thirty-three minutes from the West End London terminals. A development plan of the estate was the subject of a competition for which Sir Ashton Webb and Raymond Unwin were the judges, and in which sixty-two architects competed. The land was to be available to freehold purchase, either in larger or small areas, in conformity with the town-planning scheme; or could be arranged to be sublet on a commonly acceptable building agreement basis.

Fig. 1. A View in King's End Avenue

Ruislip itself is distant about twelve miles from London, and had in 1911 a population of about fifteen hundred people. Ruislip village is comprised of a small cluster of houses, some ancient and timbered; two or three small inns; a few shops, and, set well back from the main street, a large and beautiful mediaeval church, which has been judiciously restored and preserved. The section of land lying between Ruislip Village and Northwood is that portion of the property now being developed as a garden suburb, under the name of "Ruislip Manor."

Fig. 2. Real-Estate Plan of One Section of Development

The plan for Ruislip Manor, awarded in competition at the end of 1910, and regarded as the first really important town-planning competition in England under the new Housing and Town-Planning Act of 1909, was the product of Messrs. A. & J. Soutar, architects. The new town-planning layout was intended to take care eventually of some forty thousand inhabitants. The original plan made provision for a total of 7,642 houses, of which 3,556 were not to exceed £30 yearly rental; 3,541 were to rent between £30 and £60; 524 between £60 and £100; and of the entire group only 21 were to reach rentals exceeding £100 apiece.

This suburb, as well as any other arranged conveniently to be occupied by people whose work daily calls them to London, has its plan primarily dominated by convenience of access from the individual houses to the principal stations.

Fig. 3. Selected Competition Plan
Submitted by A. & J. Soutar

Provision has also been made in a square, located in the portion near Ruislip village, and in a market-place, for a sufficiency of shops. Open-air recreation spaces are also ample and well located.

These King's College estates of Our Lady of St. Nicholas of Cambridge, being anything but level, Copse Wood area on the north being particularly hilly, these factors have been recognized and utilized by the successful designers by leaving many of these more difficult slopes undisturbed as wooded hillsides.

This new estate also adjoins the Northwood Golf Course, and the five railroad stations are all fortunately situated upon the perimeter of the tract, so that it is in itself not broken up by unsightly railroad or tram lines. Agreements made with the College guarantee the preservation of the land for a long term of years to the purposes of this development, and give the company the opportunity of taking it over in sections, thus making it possible for them to realize the development of each section before it becomes necessary to undertake any further purchase; while the arrangement of existing roads is such that they will provide ample frontages for all cottage developments for a considerable time to come. The first land was finally transferred under this agreement in June, 1910, and the first operations were undertaken on the north end of Copse Wood (served by the Northwood station), and the King's End estate section, adjoining Ruislip station.

The plan of the prize design, as shown in Fig. 3, is unfortunately very much reduced from the original, though it can, however, still be readily understood from the following description. One corner of Northwood Common, which bounds the property on the extreme north, appears at the very topmost portion of the cut. Copse Wood is the section immediately south of Northwood Common, of which the right-hand portion opens upon the open land of the already established and favorably known Northwood Golf Course. It is proposed to link Northwood to Northholt and Ruislip by a new road, while the Copse Wood section and the central building area of the strip will be permanently separated by the Ruislip Reservoir water-basin, with its surrounding reserved area of fields, also clearly indicated on the map. Cotsford Close and Eastcote are comprised on the central area to

be developed, of which the section immediately south and east of Ruislip Reservoir is the thickly wooded portion formerly known as Park Wood; while the Manor Farm and Windmill Hill areas are shown next adjoining, at the right of Ruislip village itself, and just north of Ruislip Manor Halt, the station in the center of the tract on the Metropolitan Railroad, from which the radial road lines open to the north. It is at this point that the new shopping center is proposed, on both sides of the track; while the property development extends from this center southeast to Northholt Junction on the Great Western Railway, which lies at the extreme lower or southern apex of the estate. The darker portions upon this section are reserved either for recreation fields, parks, unbroken woods and fields, or — in the case of the extreme southern tip — factory and workshop reservations. Another market center is also intended, and shown on the plan, just a little distance from the extreme southern tip of the property.

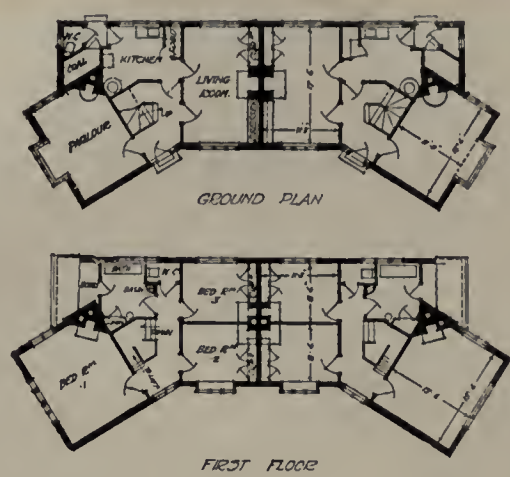


Fig. 4. Two Houses in Eastcote Road
Michael Bunney and Clifford C. Makins, Architects

Two later revisions of the original preliminary scheme development are shown, as they were worked out in greater detail for the different sections that were first to be developed, in Figs. 5 and 7, the latter being a still larger and more detailed layout of that portion of the area that is indicated by the words "second portion," marked on a part of Fig. 5.

From the real-estate end, the development of these English Garden suburbs and village properties is managed, first, by the distribution of carefully prepared advance literature, based in each case upon an attractively worded — while sufficiently truthful! — estimate of the advantages of the location and the property, accompanied by such clearly visualized and cleverly detailed plans of individually featured properties and sections as are shown by the example, Fig. 2. Great pains are also taken to determine, in advance, the architectural character of the development. This is done by two means. First, by featuring in this preliminary published material carefully prepared and attractively rendered architectural designs of houses previously determined upon as being appropriate to certain lots (Fig. 4 is such an example), accompanied by guaranteed estimates for their construction — all the detailed work in regard to which is then taken off the hands of the individual investor and carried by the investment company. Incidentally, it is this method alone that makes it possible to take full advantage of the economies to be made from the complete standardization of units, such as doors, windows, etc., throughout a development; as well as to carry on the building of certain sections and houses at the same time, under one contract and supervision. Wherever it is possible, advantage is also taken of the opportunity actually to construct some of these buildings upon the property, either for real or imagined tenants; so that, when the property is open for individual inspection and sale, the visitor is shown these attractive buildings — actually constructed on the lots — just as they appear in Fig. 1, with their appropriate surroundings of trees, shrubbery, vines, fences, and gardens — and sometimes even with furniture and draperies all in place! Only in this way is it possible to impress some unimaginative purchasers with the possibilities of the building up of a property of this type; while these houses also serve an important purpose in visualizing and setting actual standards for the sort of architectural development desired by those in control of the property.

The initial development undertaken was to build a total of one hundred small houses and cottages, costing about £30,000, to rent at prices varying from six to fifteen shillings per week; the tenants, as members of the society, being entitled to a share in the surplus profits, in addition to interest on their share of the investment, which was to amount at least to £5. It has been found by experience at Ealing and Hampstead that the added incentive actually given the individual owner from this participating membership is invaluable, while members of similar societies often received as much as 1s. and 6d. to 2s. the pound as profits on their investment.

The original company borrowed two thirds of this sum from the Public Works Loan Board under Section IV of the Housing and Town-Planning Act of 1909, which Board also approved a loan for about £500 for the purchase of the necessary land for the erection of the first thirty-one cottages to be constructed, — for which plans were then approved, — but the company could

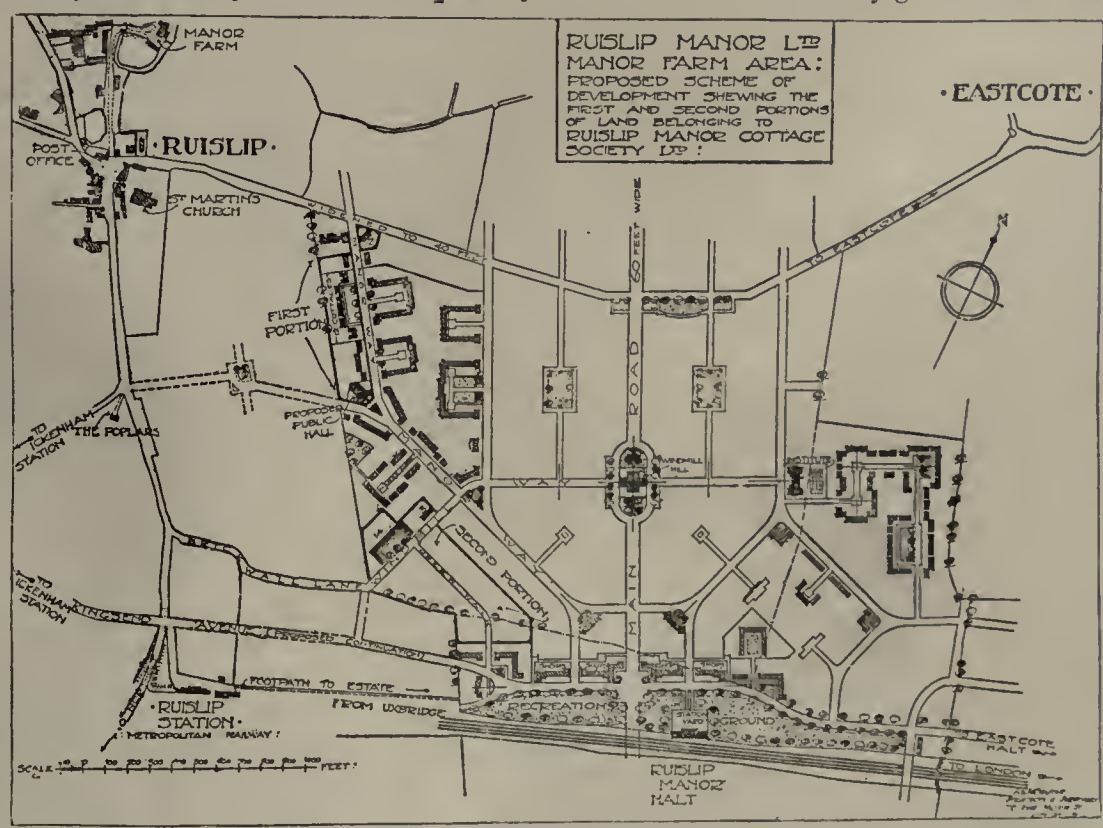


Fig. 5. Plan, Manor Farm Area (130 Acres), Round Windmill Hill, Between Ruislip Manor Halt and Ruislip Village
A. & J. Soutar, Architects

actually also very naturally expect to raise a considerable part of its capital from tenants, and the investing public interested in obtaining better housing conditions for the people. The Cottage Building Society was also to convey property to freeholders on the initial purchase of property for 30 per cent cash payment, the balance being carried by a building and loan stock paying interest at 4 per cent.

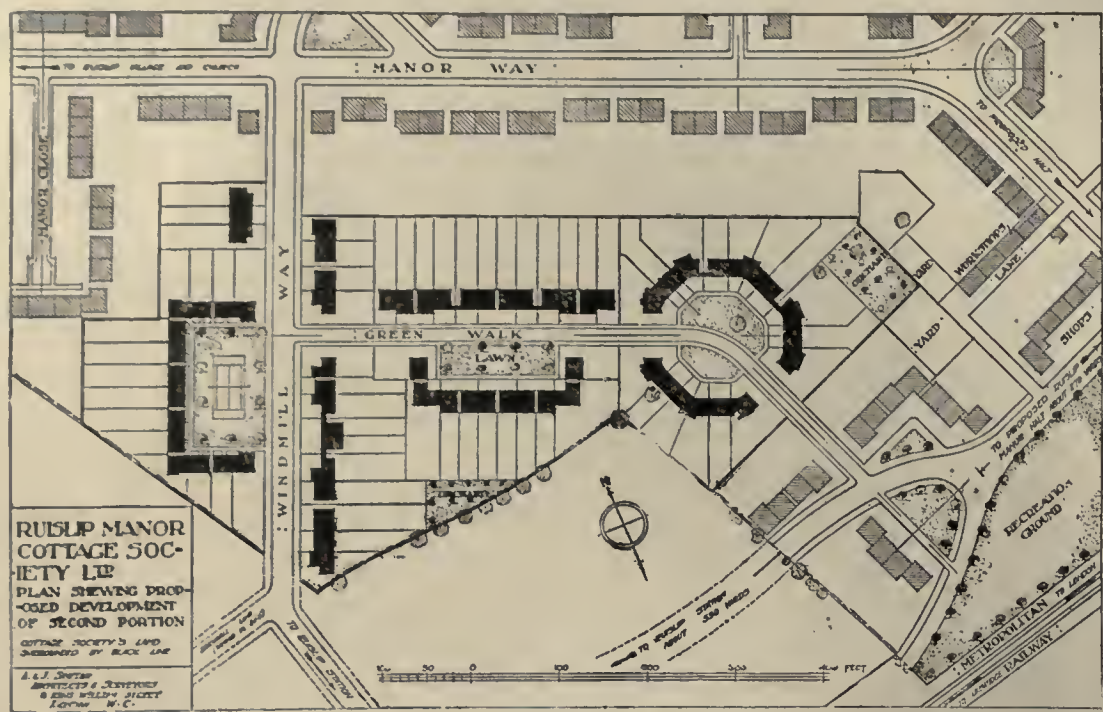


Fig. 6. Ruislip Manor Cottage Society, Ltd., Showing Detailed Development of "Second Portion" of Land
A. & J. Soutar, Architects

Capital shares in the Ruislip Manor Company were 75,000 in number, and established at the value of £1 each. They were to accumulate dividends of 5 per cent, free of taxes, and, on a final adjustment of the company, are to participate in a full return of the capital, with a bonus of 10 per cent additional. In the development of this estate — as in similar instances throughout England — the houses are being built by organizations separate from those owning the land, in which membership or shares can also be bought by the purchasers or renters, who are indeed given every encouragement to become members, and thus participate directly in the property benefits, as well as be concerned with and help in the control of the estate.

A few of the accompanying illustrations show the kind of houses, their type of design and grouping arrangement, as they were carried out in the development of this property. The double house shown in Fig. 4, for instance, situated near the entrance to the estate from the main road, is built of gray and brown Tring bricks, with soft red hand-made hanging tiles and dark red sand tile on the roof. The half-timber work is of oak, and the plaster filling is left with a smooth troweled face. These cottages — planned to occupy and turn a corner intersection of roads — are rented for 16s. per week and are so planned as to be rebuilt elsewhere, and sold, freehold, for £1,200 the pair; or leasehold, with annual ground rent of £6, for £475 apiece.

The cottages that are shown in Figs. 8, 9, and 10 are built as a group of four cottages, of which only the right half is shown in this picture. The house at the left (plans Fig. 8) is sold at £600, with a ground rent of £5, 5s., or freehold for £732. The house at the right (plans Fig. 9) was given a freehold price of £710, or a leasehold price of £575, with ground rent the same as in the other cottage.

Figure 11 shows another group of four cottages, the perspective illustrating the entire group, with the floor plans of the two single end and center double cottage drawn above and below the perspective sketch.

Finally, Figs. 12 and 13 show a group of four more cottages, in this case all detached houses, which are typical, both as individual cottages and in the arrangement of the group, of the general type of development here originally planned. Of these houses, the two shown recessed in the center have a leasehold selling price of £685 each, with a ground rent of £8, 2s., and 6d., the freehold sale being £872. The same figures also apply to the two end cottages.

The principal purpose in dividing the estate into its several sections — distinguished by the titles of Copse Wood, Park Wood, Cotsford Close, Manor Farm, Windmill Hill — is both to complete the development of a section at a time, and also, in part, to group the dwellings of different classes so as to render each group more or less harmonious in size and price, as well as in the class of tenantry occupying them.

Copse Wood, for instance, the northern portion, from its more isolated and hilly character, will be best adapted for the largest houses — with their accompanying appropriately larger lots. The medium-sized dwellings will occur near the center of the development, around Ruislip Station, King's End, and Manor Farm; while the smaller dwellings and cottages will be in the southernmost por-

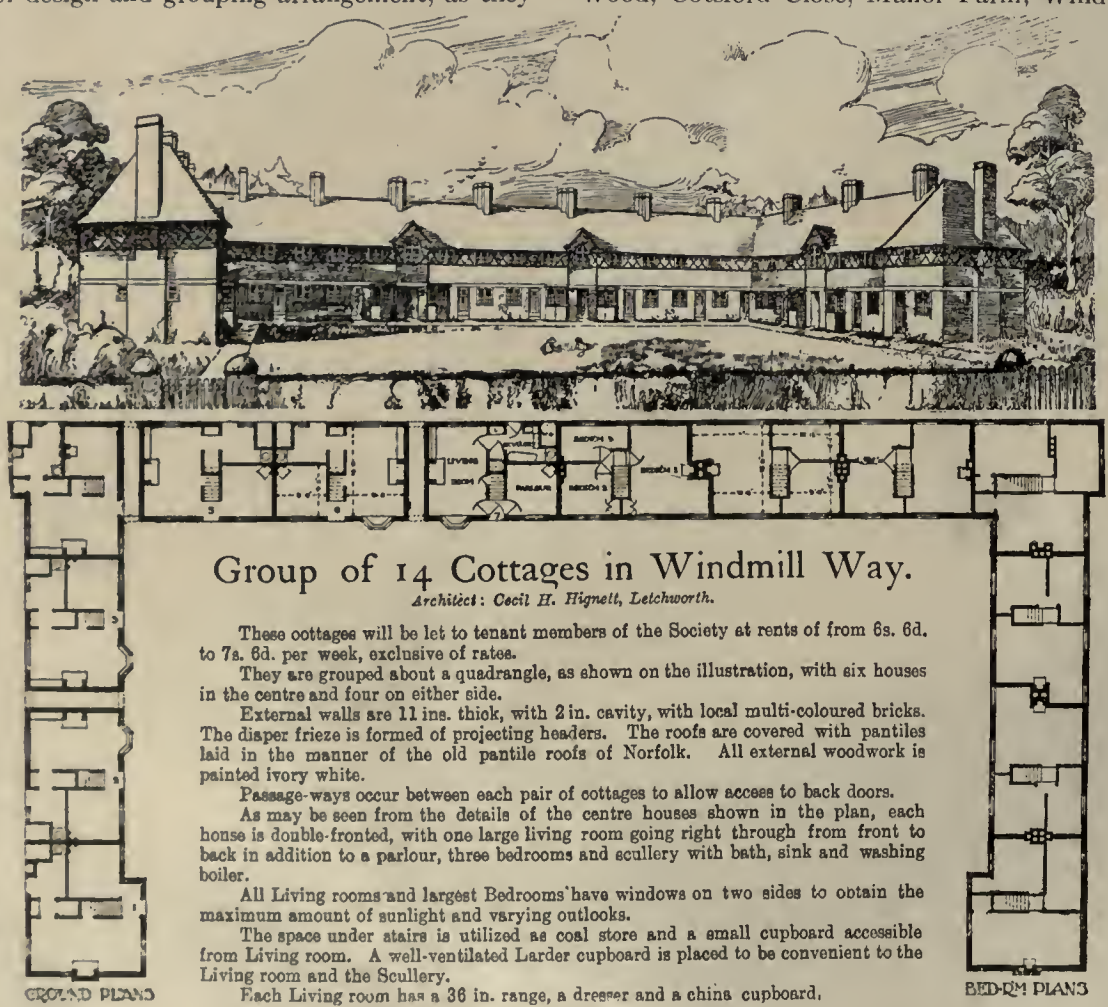


Fig. 7. View and Description of Group of 14 Cottages in Windmill Way

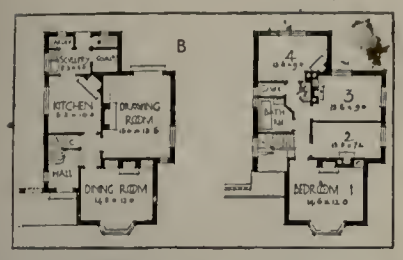


Fig. 8. Plans, Detached House at Left

Fig. 10. Group of Houses in Wood Lane
Burgess & Myers and W. F. C. Holden, Architects

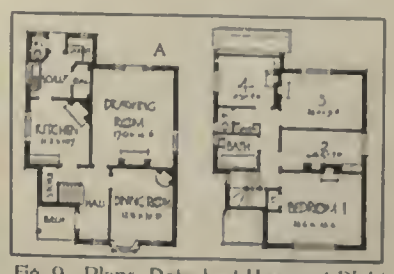


Fig. 9. Plans, Detached House at Right

tion, nearest to the factory sites and market center.

In the Manor Farm lots the plots are so arranged as to vary in price from £90 to £220, or thereabouts, according to the size and location. In King's End section the prices of lots run about the same, upwards from £100, individual lots being open to purchase on a payment of £5, the balance being taken up by the eighty-four monthly instalments of £1, 5s., and 6d., which includes the interest, these sums acquiring the freehold; while lots including private dwellings can be bought on leasehold terms for from £400 to £900, with ground rents extending from £5 to £10 per annum. These houses contain from three to six bedrooms, with two or three living-rooms, scullery, and bathroom, and the frontage of the lots varies from thirty-five to fifty feet.

The Copse Wood lots range upwards from three quarters of an acre in size, and are intended for private dwellings costing from £600 upward, on lots intended to cost £500 to £1,000 apiece. Owners of the freehold lots are assisted to build by means of a rent, including free insurance, under a rental purchase scheme furnished by an insurance company; while leasehold houses can be similarly bought on paying part of the cost as an initial deposit. An illustration of the exact working of these schemes follows:

The first method would be managed through a building society, as it would then only be necessary to cover the cost purchase of the house. The second — also including life insurance — would be managed through an insurance company. The first example, on a freehold house and lot costing £400, would require the individual purchaser to make a cash payment of £100 — or complete the purchase of the lot, at the same approximate cost. The building society would then advance £300, repayable by monthly instalments, which, including interest, would amount to £24, 7s. annually,— or a little over two pounds the month. Allowing an annual average of £3, 13s. for repairs, the total would be £28; or, if the purchaser has in the first instance borrowed the £100 necessary to make his first payment, and has to figure also on interest on this sum, an additional £5 added to the total would make it £33 the year, which sum should suffice to obtain a freehold purchase of a lot and house containing three bedrooms, with upstairs bathroom, and two sitting-rooms, with the usual service requirements on the first floor. Such a house would be nicely situated in a separate garden, near a park or open spaces, with the surroundings of the purchaser guaranteed and protected forever by the Town-Planning requirements, for the equivalent of a weekly rental of 12s. and 9d.! The purchase covered with insurance can be obtained at such a slight additional advance that it is easily the more popular form of sale, as the insurance company guarantees the complete payment of the house in case of any accident to the source of income of the purchaser by his death.

Figuring the conditions the same as before, and estimating the age of the purchaser at thirty-four years, the annual premium paid to the insurance company would amount to £26, 5s.; when, allowing £3 and 15s. for repairs, the total would be £30 the year (which would, of course, as before, be increased by £5 the year, if it was also necessary to pay interest on a borrowed original capital), the total being equivalent to just about 14s. a week rental. Both these purchase-payment schemes cited are based on completing the transaction in twenty years.

Aside from minor differences in custom, the real important asset of the purchaser — which encourages a far better class of tenantry than would otherwise be expected to undertake acquiring a home on this sort of arrangement — is occasioned by the Garden City plan of development, which removes the control of the property from any individual promoter, gives each purchaser the opportunity to obtain an interest in the control at a very moderate price, and also, in turn, reacts to make him the more interested in maintaining the distinctive character and individuality to the locality. He is also thus given the absolute assurance of protecting the future interests of the owners and residents, for all time, against the encroachment of undesirable construction or tenants, besides the guaranteed maintaining of ample open space

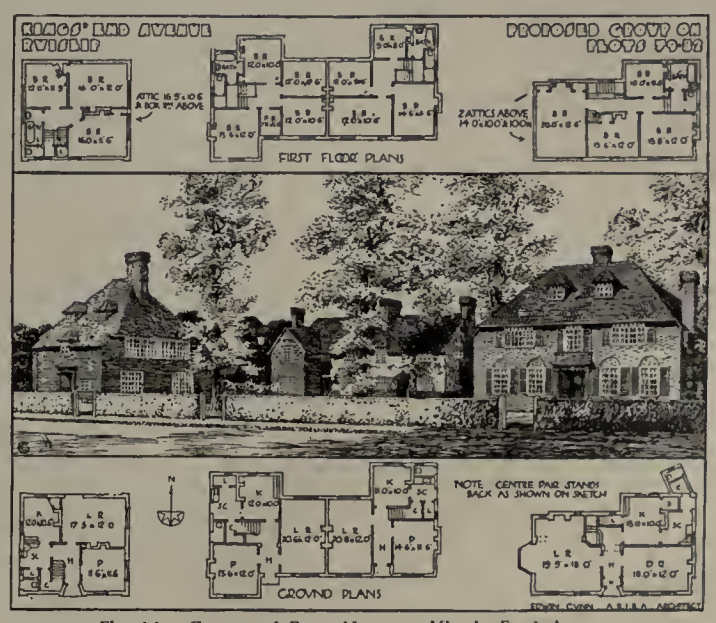


Fig. 11. Group of Four Houses, King's End Avenue
Edwin Gunn, Architect

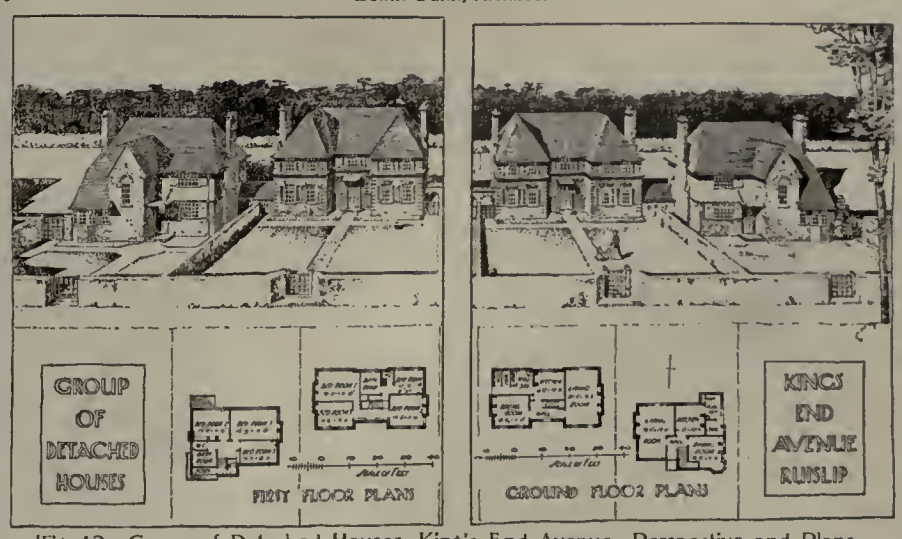


Fig. 12. Group of Detached Houses, King's End Avenue. Perspective and Plans

and parks to add to the attractive appearance of the town site, as well as also making its esthetic appearance a permanent factor by the form of parental control thus exercised over the type and kind of houses being constructed.

Unlike the free-for-all methods of development allowed in this independent country, these wise rules simply mean that, if an owner builds or buys a house in a district set apart for private residences of a definitely recognized and established class, it will be forever impossible for any selfish or careless neighbor to erect any building — whether a dwelling-place or whatever — out of keeping with these surroundings, either in size, arrangement, or artistic design; or one which is likely to prove, under any other conditions, a source of future annoyance to the neighborhood. Under this wise control, therefore, any type of development which is likely to depreciate values is prevented in advance, while to continue building up the section by houses of uniformly attractive character and class of occupancy means an inevitable and stable appreciation of the whole value of the district — thus guaranteeing the investing owner against any possibility of loss, and assuring him of a profitable money return on his investment at any time that he desires or finds it necessary to dispose of his holdings.

A proper city plan in this type of housing is even more important in the economy of its development than it is as an aid to its sightliness of appearance. Not only are the streets laid out in such irregularity as best conforms to the characteristics of the district, the land contours, and existing natural objects, such as trees, hedges, woods, etc., but a consistent effort is made to determine in advance the relative importance of the various roadways, so as not to waste money in metalling larger road surfaces than are necessary to carry the traffic they are designed to serve. Yet the original layout is of sufficient width so that this surface can be widened — as well as the sidewalk construction — if later needs require. These roads are then, in the first instance, developed like an English lane, with a corresponding attraction in appearance and a saving in their original cost. Other groups of cottages are served by foot passages rather than roads; schools and club-houses are placed inside blocks of dwellings, thus saving unnecessary and undesirable road, water, and sewage construction — while obtaining seclusion, quiet, and safety for the occupants. In short, all its construction economies are dominated by the idea that the more profitable the suburb becomes to its owners and occupants, the more fully is it possible to develop its desirable social amenities and better community attributes.

The articles of agreement under which the district is laid out also ensure the laying and maintenance of proper systems of drainage and sanitation, and a limit to the number of houses to an acre, which generally runs from an average minimum of six to a maximum of twelve on the more closely built-up sections; while often, including parks and roads, the ratio drops as low as two or three to the acre over large areas — and, in England, it also goes without saying that ample provision is always made to maintain unimpaired all places of historical interest and architectural or natural beauty.

An Architect's Trip Across France in War-Time

Some Impressions Obtained Soon After the Outbreak of European Hostilities

By J. E. O. Pridmore

YOU might have walked down Piccadilly, any afternoon of those first momentous war days, and you would probably have noticed all the old earmarks which make this historic thoroughfare representative of the British Empire. On the pavements the same kaleidoscopic picture of humanity — every color here, but now with a newly added blend of khaki. Throughout England the week-end was just as popular, football had the same devotees, and the Englishman at his breakfast-table read the death notices and the personal columns of the *Times* before he dipped into the latest war bulletin. That was what twenty miles of Channel and the British Fleet were worth to England!

It is only a daylight journey from this almost stoic complacency to Paris. In September of 1914, at the magnificent Continental Hotel, where usually eight hundred travelers live like princes, I found fifteen guests, one waiter, and one maid. And you must ring the bell to enter the barred doors after 9.30! Nothing to eat — foot it to the nearest café; and from the Continental it is just one mile to Maxim's, in the Rue Royale,

The Rue Royale in War-Time. Taxi-Stands in Front of Maxim's
Note the deserted prospect and shuttered and boarded shop-fronts

which café is the only shop open on that street from the Madeleine to the Place Concorde. The Avenue de la Paix, the Opéra, Champs-Élysées, Boulevard des Italiens — all with this same ghastly air of desertion. No shops, no people, no life; only the everlasting tramp of soldiers and roll of the ambulance — these only save the name of a Dead City. I found only one large shop open near the Opéra. A little tot kept guard inside and called to her mother from the balcony floor to wait on me. This lady, the wife of the proprietor, was preparing a meal for the staff, — herself and child; every other member had gone to the front. A loud explosion in the street caused us to run out; military and gendarmes came running from all directions. It was only the tyre of a military auto, but served to indicate the tense feeling following daily bomb throwing from the German Taubes.

A View in the Bois
Now made useful as well as ornamental as a cattle grazing range!

At the beginning of the war, the government announced that no wounded would be brought to Paris. The Teuton invasion followed immediately — until advance patrols were captured hardly twelve miles from the old fortifications! Briton, Gaul, and God stemmed the tide — no one fully understands the miracle — and threw back the German hosts in almost rout. But the Huns had been at the very gates; grim war stalked almost in the suburbs; and nearly every hotel in Paris was soon flying the Red Cross hospital flag. The unemployed and idle — for there are some still left in the Capital — spend their days along the railway embankments and at the stations, watching the train-loads of wounded which daily follow one another from the scene of conflict. Some wounded are brought into the city, but many trains are diverted in the suburbs and speed

Crowd at the Gare du Nord Awaiting Arrival of Wounded

on into the south and west, where, in every town of any pretensions, Red Cross branches are established. I traveled all across western and southern France, from Bordeaux to Toulouse, Marseilles, and Nice, and up the central portion through Lyons, Dijon, Orange, and on to Paris. In every district it was the same, — you could not escape the two counter-streams of travel. All traffic waited upon them. Daily reinforcements for the front passed a steady stream of returning wounded — a grim reminder of what these new soldiers were going to face. And while the reinforcements are coming from every hamlet and town throughout France, the wounded are returning literally to these same places — for France is becoming one vast hospital.

French Artillery en route to the Front

French Infantry Entraining for Front

About two thirds of the able manhood of France had already been in action. Another one third was ready in reserve in numerous camps, rapidly being drilled and hardened. These camps were everywhere, and the universal scope of preparations is seen when one understands that even the schoolboys were receiving military training. France is struggling for national existence, and her people realize it. Soldiers and civilians are serious in a way we don't expect of their race. I traveled hundreds of miles in the same compartments with wounded soldiers. I went into the hospitals and talked with them in their beds. One and all are anxious to get well quickly, and for one object, — to get back to the front. Some of the wounds are quite of a minor nature; indeed, many soldiers have been invalided for nervous collapse alone—from the deafening roar of artillery, and the hail of shrapnel, which in many cases has torn off the knapsacks without inflicting wounds.

One infantryman had a German helmet which he put on at every stopping-place, and, head out of window, regaled bystanders with the story of its capture. He had fought alongside the British troops, and he spoke frequently in admiration of them, calling them "*mes amis;*" and when he learnt my nationality insisted on shaking hands with his good arm, and giving a French bullet as a souvenir. Of course, everything possible is being done for these wounded heroes. On the Riviera, from the Italian frontier to Marseilles, all the Grand Palace Hotels are turned to Red Cross purposes. This is true of the magnificent Negresco and the Angleterre at Nice, of the Casino at Monte Carlo, and, to cap the climax, even the Exposition Buildings of the Lyons 1914 Show have been added to the list, and at Monte Carlo not a wheel turns! It is the first time the games have closed, week-day or Sunday, since the last Franco-German war, in 1870.

Watching British Officers Outside Railway Station, Bordeaux

Refugees Taking Steamer for England, at Dieppe

Marseilles, when I arrived, was expecting the British Indian troops, twenty-seven boat-loads of which arrived the following day. A camp had been established five miles out of Marseilles, in which the giant Sikhs and the little Jap-like Gourkas were to recoup before going to the front. They needed rest, too, having been on the water for six weeks. At Marseilles I was delighted to meet an old friend, the London "Taxi." This machine had brought a British transport officer from the battle of the Marne, four hundred miles, to Marseilles, where he was arranging transport for the new troops. As luck would have it, the Britisher lost his interpreter, and the much-decorated French Major who accompanied the Englishman was reduced to sign language, until I gladly undertook mediation.

We traveled as far as Lyons together, and I learned many things from the British officer, about Mons and the subsequent retreat, where he had piloted commissariat, munitions, and supplies in a death struggle in advance of the sorely pressed English regiments. The French General refused aid in this extremity, and so Kitchener crossed the channel in a torpedo boat — nothing else being available at the moment — and ordered the British column to the rear; only relenting when three French generals had been cashiered. At Mons the British Army was taken completely by surprise. Men fell into the ranks of any regiment that was nearest. Highlanders, Fusiliers, and Guards fought indiscriminately side by side, and with British pluck mowed down mass after mass of German infantry — which had just received the Kaiser's urgent message to lend all their energies to one object. "You must trample under foot the contemptible army of General French!" — and ever came on as though there were no ending.

The commissariat for the Indian troops had one unusually interesting problem. Goats' meat was a principal food, and the animals were turned over alive to the troops for their special manner of killing. They must *see* how they are killed. On leaving Calcutta, the officers of one transport asked the head man of the regiment whether his troops would eat frozen mutton. He looked nonplussed for a moment, and then, with a smile, replied: "Well, Sahib, I think the regiment will eat the iced sheep provided one of their number may always see the animal frozen to death."

If there was one bright spot in France in September, 1914, it must have been Bordeaux, where the government had brought sudden importance and activity. Never since its former period as Capital had Bordeaux been so jammed with humanity. The government commandeered the magnificent Hotel De France, and half a dozen other leading hostelries, so that we drove for an hour before we could find a room. Here at last one saw the

animated life of the café and the street, bright with the military colors — for France has not yet adopted khaki. Hotels and shops were thronged. Army autos dashed madly through the streets, and one would not have realized it as the seat of a fly-by-night government had it not been for the wounded and the mourning, which had already penetrated even there.

A Barricade "Somewhere in Paris"
Park trees were felled in the Bois de Boulogne to help stop German advance

The story of those first few days in September, when German armored motor-cars and cavalry reached a suburb only twelve miles from the Paris fortifications, included the abrupt departure of the government to Bordeaux. Then, four days later, the British at Meaux fought and stemmed the torrent, and, miracle of miracles, the tide which had almost enveloped the Capital began to recede.

No sufficient reason has yet been given for this abrupt change; but at Meaux the British finally brought up, after a two weeks' forced retirement of one hundred twenty miles, during which vastly superior numbers of the Kaiser's troops had used every effort to annihilate them. And here, at last, reinforcements became available — and at once made themselves felt. On the sixth, the British at Meaux having started the advance, the entire line of the Allies became mobile, and the movement, begun on the sixth, was quickened until, on the tenth, it began to assume the proportions of a rout for the German forces. The eighth, being the Feast of the Nativity of the Virgin, all France considered this a good omen. A further stroke of fortune for the Allies was the wet weather, which started on the eleventh, rendering the German retreat more difficult, and causing many guns and much stores to fall into the hands of the Allies. In six days the Kaiser's troops were driven sixty miles further from the Capital!

When I visited the vicinity of Meaux, the train which carried me as far as Gugny was filled with suburban residents going back to their homes, which they had not seen in two weeks. Many would find them a charred heap of ruins; nearly all had suffered damage of some kind. One Paris merchant had been out the day before to reconnoitre, and was now bringing out his family and a store of provisions. On the train he was telling his wife how a long mound, where German dead had been buried, now crossed their garden.

For visiting the battle-field of Meaux, I secured a Russian guide, who spoke fairly good English, whom I had picked up the day before in the environs of Paris. He had a holy horror of my photographing in the war area, and regaled me with stories of newspaper men who had been commandeered to work all day long burying the dead, insisting on the chances one ran of being arrested and shot as a German spy. I was inclined to discount his apprehension, but subsequent events proved his fears well grounded. We reached Gugny by train, and our troubles began with our efforts to find any kind of a conveyance. It was getting towards evening, but we at last found a chauffeur to drive us the six miles to Meaux, where we arrived at 5 P.M., and I immediately set about getting some pictures of the demolished bridges, and the wreck and havoc caused by the fierce fighting in the town.

We were soon halted at the river-bank in the very act of photographing the ruined bridge. Krinsky, my guide, became

A Marne Bridge
Blown up by the British

A Bridge Twelve Miles from Paris*
Destroyed to stop German advance

excited, abusing me for carrying a camera. Of course I had my passport, issued by the American Embassy in London, and I felt confident all would be well if I could get it properly examined. However, the most unexpected luck favored me, for when the patrol brought us before the commander in the "Marie" I at once recognized the much-decorated Major with whom I had traveled two days previously from Marseilles to Paris. The Major at once asked how he might be of service to me. But when he saw the camera he insisted that I remove the film, which he confiscated, although nothing was said about eight others which I had already exposed and stowed away in my pockets. When my new-found friend heard I was to catch the London express from Paris the next morning (the last train then having left Gugny), he ordered his own chauffeur to drive me back to the Capital. The way that high-powered Fiat, with the military sign displayed over the hood, flew over those moonlit roads is something I shall never forget. It was a most fortunate ending to an adventure which might have turned out very differently; but Krinsky vowed mightily and often that never again would he be caught in such a predicament with an American camera fiend!

Once again my liberty was interfered with, this time in Marseilles, where I suddenly found myself a prisoner in a bathroom. Only after being let out did it occur to me that my baggage had by this means been examined for evidences of spying. Evidently it satisfied inspection! France, however, is infested with a plague of German spies, and it has seemed impossible to eradicate them. As fast as they are caught and shot, others are waiting to take their places. It is a serious condition, and the military are taking energetic steps to root it out. The foe within is as grave a menace as the foe without, especially that mushroom variety, the German Spy.

Of course, to an architect, the subject of rebuilding — which must come quickly after actual warfare ceases in the destroyed cities — is of profound interest. Indeed, so sure has France been of her gains that she was even then making a beginning at reconstructing her villages and farming communities, even immediately behind the lines. Various local agencies already had this matter pretty well in hand, and if finances only continue to become available, local architects and builders will probably be given every opportunity to make a very good account of themselves.

* It was here that Mr. Pridmore was arrested for taking photographs.

A Train of the Famous "75" (Soixante Quinze

An Alteration for M. R. Skillman, Esq.

On the Old Albany Post Road, New York City

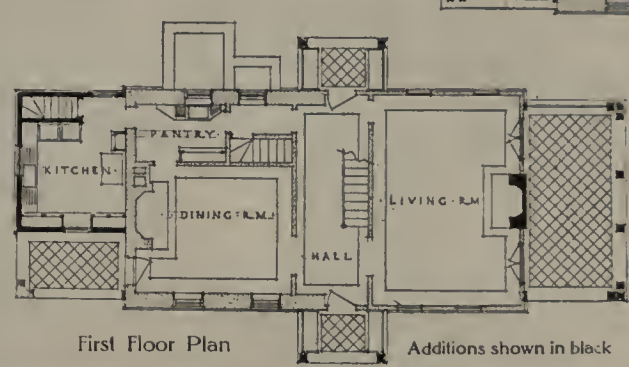
Dwight James Baum, Architect

Detail View of Entrance Porch and Front
Dwight James Baum, Architect

Structure Before Alterations

Second Floor Plan

An unusually interesting example of an house alteration is shown in the photographs and plans upon this page. The older stone portion of the house is nearly two hundred years old, the wooden addition being about one hundred. Belonging to a type fairly familiar on Long Island, whose great possibilities for renovation and occupation are limited only by the present-day depreciation of their surroundings, the work of these two periods has been combined by Mr. Baum under a uniform roof line without losing the interest of the old composition. Even the old vine over the entrance has been retained by the use of a new, and similar, porch arrangement; while the attractively informal character has been very well held, as appears in the general view below.



First Floor Plan — Additions shown in black

General View of House from the Road

Window in Wooden Wall

Window in Stone Wall

MODERN FURNITURE IN HISTORIC STYLES

PART I. RECENT PIECES OF FURNITURE INSPIRED BY GOTHIC PRECEDENT

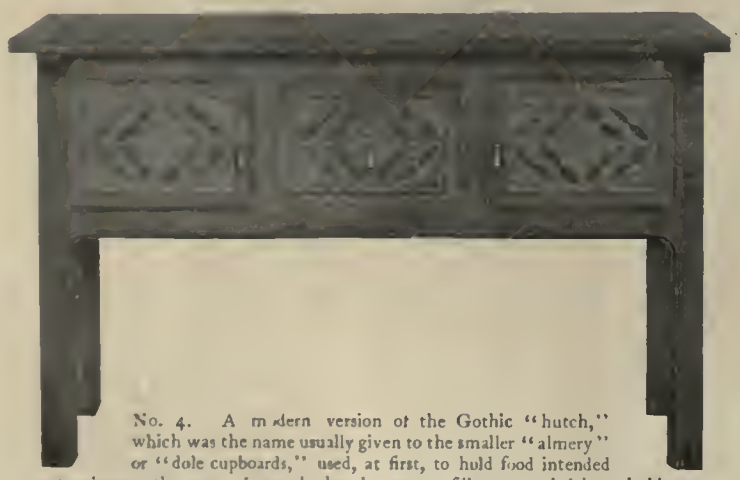
This new department, illustrating types of Period Furniture, has been inaugurated as a feature of practical value to the architect, to appear regularly in THE ARCHITECTURAL REVIEW. *It is the intention by this means to illustrate occasional pieces of furniture of architectural value, and to keep the profession informed of furniture recently manufactured that conforms with acceptable standards of definite architectural styles. As only a selection from the best of the furniture currently manufactured by American cabinet-makers will be pictured in these pages, our readers are invited to submit written inquiries when desiring further information about any individual piece, or pieces, in which they may be interested. They may in this way obtain the names of the manufacturers, and be informed of the sizes, prices, and places where the piece illustrated can be obtained.*

Address all inquiries to Modern Furniture Editor, THE ARCHITECTURAL REVIEW, *144 Congress Street, Boston, Mass.*

No. 1. Chests are reckoned as among the earliest of all furniture forms, serving as repositories for personal and household belongings, and also as benches. Gothic chests, always of oak, were carved either with linenfold or *parchemin* panels, or with Gothic tracery. Late Gothic chests, those of Tudor times, transitional to English Renaissance (Elizabethan), often showed "Romayne" panels. All three of these motifs were distinctly architectural, being constantly in evidence in the carved panelling of Gothic and early Tudor times.
The modern chest illustrated shows an interesting rendering of the linenfold, while others, with Gothic tracery, and with "Romayne" medallion panels, are also obtainable in reproduction and adaptation.

No. 2. Reproduction of an elaborately decorative cabinet of late Gothic character. The doors are fastened by means of an interesting secret device originated by the cabinet-makers of the period. The three posts are carved in the most free and naturalistic vein of Gothic art, and the doors each contain eighteen panels carved with heraldic bearings and portraits of "personages," executed in the Flemish manner. Tall linenfold panels form the sides.

No. 3. In late Gothic times, such ecclesiastical furniture forms as the *credence* and the "almery" came into domestic use as cupboards for household belongings and food. This modern oak cabinet, made in the form of a *credence*, shows the last stage of the transition from Gothic art to Renaissance. The linenfold panels, the mouldings, and the general proportions of the piece are Gothic, while the other panels, as well as the four supporting posts, are of distinctly Renaissance character.



No. 4. A modern version of the Gothic "hutch," which was the name usually given to the smaller "almery" or "dole cupboards," used, at first, to hold food intended to be given to the poor. Later the hutch came to fill more varied household uses, and in this modern adaptation in oak, the center panel is a drawer-front with cupboard doors on both sides.

No. 5. A modern adaptation of the characteristic Gothic stool, with tracery panels which are carried out in polychrome coloring of mellow hue.

No. 6. The usual Gothic table consisted of a large board on trestles, but modern needs call for a piece of furniture less primitive. Structurally and decoratively this interesting adaptation is essentially Gothic. Antique furniture of the period is exceedingly rare, and worthy reproductions and adaptations are by no means common.

No. 7. A small Gothic cabinet in oak, an interesting study in modern adaptation. The mouldings are characteristic, and the hardware studied with a view to conformity with the period. The panel of the upper door is carved with the *parchemin* motif and clusters of hop berries, while the panel of the lower door and the side panels are interesting examples of one of the many variations of linenfold.

No. 8. One of the most characteristic of Gothic furniture forms is shown in this reproduction, in oak. These stools often contained a box, whose lid was the seat hinged. They were called "parchement boxes." This example shows the interestingly crude carving of the period, decorated with characteristic hop-vine motif.

No. 9. A fine reproduction of an historic piece, which is illustrated and described in Macquoid's treatise on furniture in "The Age of Oak." Such tables as this were introduced late in the 15th century as serving tables, on each side of the master's seat at the table in the great hall. The two end-panels are doors, with deeply carved Gothic tracery of about 1475, its spontaneous freedom in interesting contrast to the perfect symmetry of the tracery of the center panel. The doors are framed by an unusually heavy one-inch moulding, and the small panels of "checker-carving" above and below the lock-plates show a characteristic Gothic device which lasted even after Renaissance art had radically replaced most earlier decorative motifs.

No. 10. An oak wall cabinet of modern manufacture, in which traits of late Gothic furniture are interestingly apparent. The center panel, with traceried carving, is distinctly Gothic, while the "Romayne" medallions of the drawer-fronts, the earliest of Renaissance motifs, bespeak the transition from Gothic to Italian, which began in the Tudor period and almost entirely eclipsed Gothic forms at the inception of the Elizabethan or English Renaissance period.

No. 11. A fine reproduction of a Gothic cabinet, its structural lines highly expressive in their simplicity, and its carved decoration confined entirely to a beautiful rendering of the linenfold. This cabinet, and the long "hutch" above it, represent the highest degree of scholarly accuracy and conscientious execution attained in the art of reproducing today the historic furniture forms of the past.

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Old Series, Volume XXIII, Number 1

JANUARY, 1918

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THE importance of the item of labor in building construction has long been realized, in so far as it affects the time and difficulties of construction; but we are only beginning to comprehend its importance as an element in the cost of the work,— and that fact is now being brought to our attention principally because of the new emphasis placed upon the old uncertainties in regard to labor, its supply, demand, and wage, both for the immediate present and in the more distant future.

Various arbitrary apportionments of the total percentage of labor cost entering into the finished building have been made, more or less authoritatively. This proportion varies, according to the standpoints or experience of different individuals, as equaling from seventy-five to ninety per cent of the total cost; and there exists every probability that it is somewhat nearer the higher than the lower figure. For, in addition to the final item of labor on the handling, installation, and finishing of the structure, it must be realized that the problem of labor is the most important single item influencing the cost of every constituent material, — throughout the entire process of its manufacture, handling, and transit, — inasmuch as every material entering into the construction of the modern building is more or less completely fabricated, worked, or artificially produced by means of labor employed, directly or indirectly, upon some of these many and several tasks.

In brick, for instance, the initial cost of the component materials is practically nothing; the item of machinery and plant nearly as negligible; and the labor costs of digging, handling, loading, and transporting the finished product comprise almost the entire elements entering into its manufacturing cost — the single exception of any importance being perhaps contained in the item of fuel for the burning, drying, and transportation of the finished product. The same is practically true of the milling of lumber, the fabrication of steel, the manufacture of hardware, the quarrying of stone or marble; the only variable items being the proportionate value and depreciation of the plant necessary for carrying on the work of fabrication. It should also be realized that, outside of the interest and depreciation on the plant and investment, the constant — and generally unanalyzed — item of overhead charge itself is composed principally of labor, clerical or otherwise.

In estimating labor costs, therefore, there is not only the direct cost of labor to be charged against the construction of the building, and the initial labor cost of fabrication of material entering into its construction (which is generally recognized), but there is also the indirect cost of labor in the "overhead charge," which is less generally taken into account. When it is realized, however, that a large proportion of the overhead charge resides in such items as bookkeeping, superintendence, financing, repair and replacement of plant and power, shipping and yard handling, etc., its importance — even in that department — should easily be realized.

ONE of the most important and uncertain future elements in regard to the cost of building construction lies in the labor situation, especially as it is concerned with the conditions that are likely to exist at the conclusion of the present war. It is true that we are there entering into a realm of conjecture in which one man's guess is perhaps to be accepted as as good as another's; but the best authorities appear to be nearly in agreement as to certain fundamental essentials. One of these is, that the exhaustion of man-power now going on in Europe, combined with the necessity of reconstructing many cities and roads and many manufacturing and utility works, now destroyed or running down, will result in every way to postpone or prevent any resumption of the emigration from Europe, which has been so important an element in the United States labor situation in the past years. In other words, foreign governments will undoubtedly endeavor, by legislation or otherwise, to prevent all possible losses of population — at the same time that the economic tendency will naturally be to restrain emigration losses, because of the many opportunities and great demand for labor that will probably naturally exist throughout many sections of Europe,— perhaps for many years after the war,— at prices that must almost inevitably be greatly in increase over those paid for similar work in Europe before the fall of 1914.

This new and more permanent demand will far more than offset any immediate decrease in the demand for labor now employed in so many of the special war trades, and will therefore not only absorb any such excess of labor as will reappear from these lines of manufacture, but will also quickly readjust itself to take up and make use of many of the men that will become available for commercial and individual purposes by being released by the disbanding of the armies themselves.

ON the other hand, the tremendous pressure of the taxation which will be left in Europe after the war will tend to make these difficulties most onerous for those manufacturing concerns and wealthier individuals upon whom most of the burden of carrying this tax will devolve; while whatever difference in the burden may then exist between Europe and America in favor of the latter will tend to urge the wealthier classes to escape from European conditions — rather than the working classes, who have in the past comprised the principal class emigrating from Europe to this country! In all probability, this would tend to *decrease* the number of European employers; but, on the other hand, there is every evidence that all foreign governments are using every possible means of organizing local manufacturers so that they will be in the best possible position to strive, immediately the war ends, to obtain a balance of trade in favor of their country, as that alone is, in each case, to be depended upon to bring back to them the wealth which will make it possible to carry their taxation easily enough to ameliorate or avoid the financial exhaustion of their country, whichever one it may be!

So far as we in America are concerned, therefore, there would appear to be little, if any, prospect of dependence in future upon the "cheap labor" which has in the past always been available for American manufacturing and construction projects. It is of course recognized that the exact conditions will vary in the different American trades and professions. Each one will be especially affected by the war at its conclusion in some peculiar and individual way. Yet, so far as the building trades are concerned, the situation in regard to labor cannot, as it is now possible to foresee the future, ever again return to the easy situation which we had come gradually to accept, and depend upon, at least in the way it had existed in this country up to three short years ago!

Under these conditions, it would certainly seem that the present apparently onerous building costs cannot be much, if any, diminished by the completion of the war. This would appear to be generally true of all construction work, once it is fully realized how important an element of cost labor has been and will remain in the fabrication of the finished product from the raw material, as well as in the actual carrying on, construction, and maintenance of all building projects.

THE ARCHITECTURAL REVIEW

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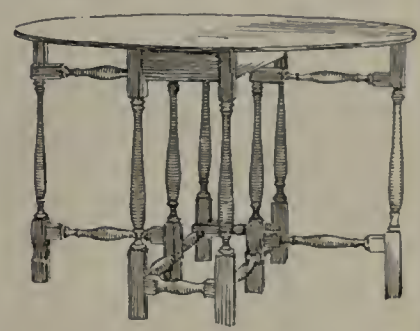

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The Architectural Review

Volume VI (Old Series, Vol. XXIII) February, 1918 Number 2

The New Art Museum at Santa Fé

A "Revolutionary" Architectural Design

By W. W. Kent

The photographs of Old Missions are reproduced by courtesy of The Smithsonian Institute, Bureau of American Ethnology

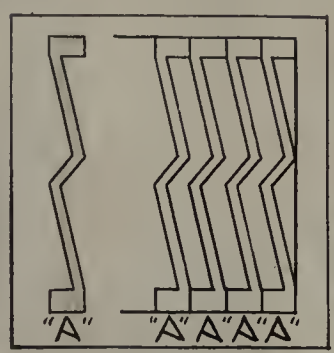
WHAT first strikes the visitor to Santa Fé's new Museum is the perfect appropriateness of the style to this delightful old city of romantic historical associations. It brands immediately, as not only false but extremely disastrous, almost all the preceding local attempts at architecture which have been made for many years — with a few notable modern exceptions, in which should be included the judicious restoration of the old Spanish palace, built on or from the ruins of the ancient adobe pueblo in the public square.

The Museum's next claim to consideration — and one which makes a strong appeal — is its picturesqueness, in which, however, the classic quality of the Spanish mission style is not wholly lost. It is, indeed, the most picturesque modern building of its type in the West, as far as the writer, in his experience, can judge.

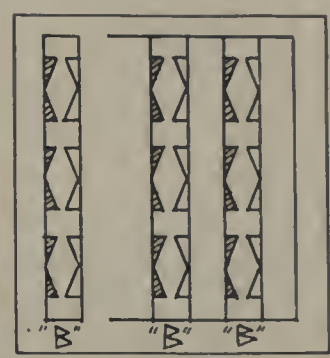
Two features stand out from among the many excellent details of the building: first, the great, dignified, and yet rich, auditorium, with its ceiling of strong wooden beams and panels, filled with small sticks laid in, herring-bone pattern, in slants alternating in the panels, — the very essence of good construction and first-rate design, as in old models. Second, the charming *patio*, or court, that, from the excellent scale of its details, seems really larger than it is. Its grassy center, tiled walks, gray walls, and projecting beam ends need only the constant sun which it enjoys to bring back old Spain and even older Acoma, Laguna, Oraibi, and all the thrill of the story of the old Spanish *conquistadores* and the seven cities of Cibola.

The exterior color, while still a little too raw in its pink brown attempt to suggest the old adobe tone, is one which weathering will undoubtedly bring to a good result. As for the interior colorings, they are almost perfect in their absolute strength and simplicity, being confined to red and green, against the foil of gray walls and of nearly natural wood colors. Moreover, they are cleverly used, as in the ancient way, to emphasize the carved ornament of the woodwork, which is always placed in this building exactly where it should be in every *simple* design, *i. e.*, on corbels, rails, balusters, and grilles, etc., or on the most important details of the design. Located in such places, the small amount of ornament counts for its full worth, enhancing its own value and that of the parts so decorated.

The lesson for architects (it seems to me) is not so much that we can find, in its simpler details of balusters, corbels, etc., a new path to follow in de-



Santo Domingo



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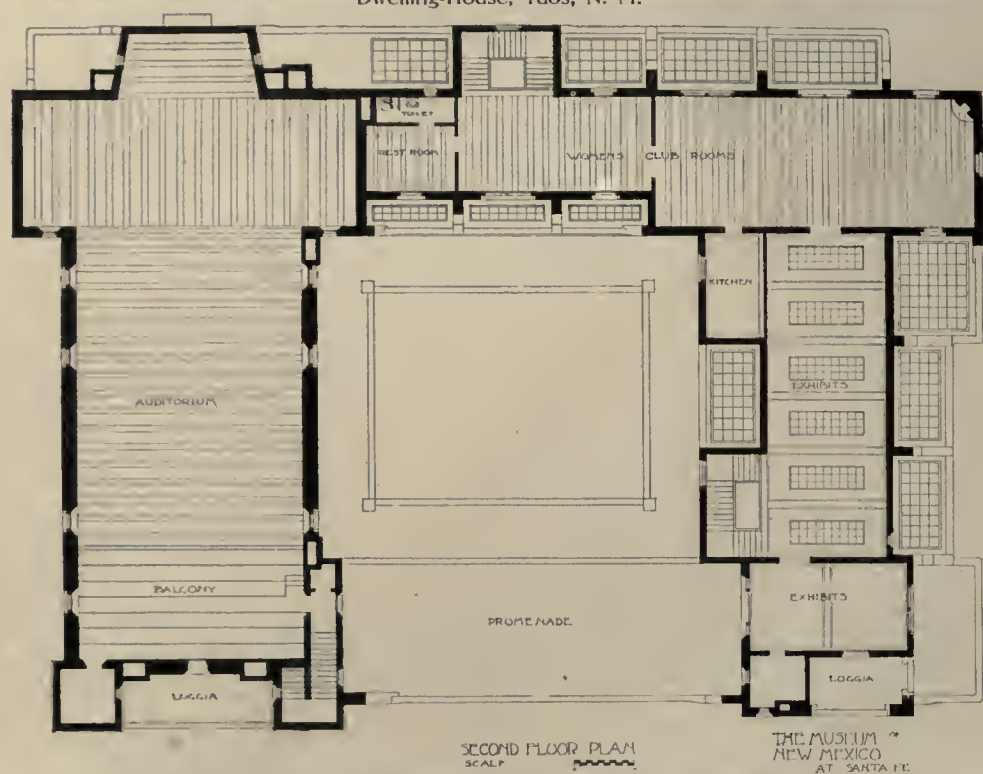
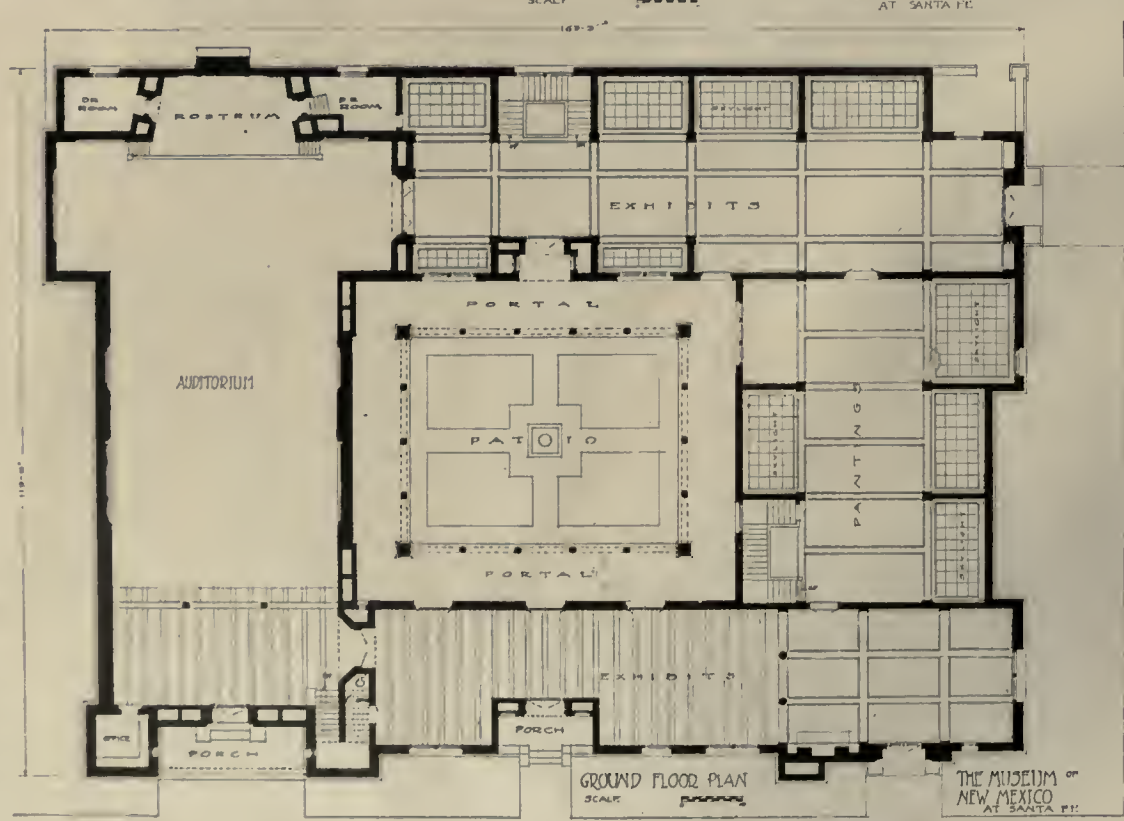
sign, — although that, too, is apparent, — but in the fact that the architects have built a design which is not only good of its kind, but *perfectly appropriate* for Santa Fé, and peculiarly available for the purposes of housing Indian — or rather *American* — art and archeology! Other designers also can find here a valuable hint. This does not mean that we should everywhere build Hopi houses or public buildings in the style of the Spanish missions; but that we should build *appropriately;* the style being a secondary consideration. Nor in saying this would I condemn the Hopi or the Mission style in any way — even for employment in other semi-tropical localities. Both are rich in suggestiveness for good detail. Indeed, from the Hopi pueblo and the minor arts of Hopi decoration, we can take extremely instructive hints both in form and color — hints that are so rudimentary that they may safely be made the basis of detail in many architectural styles. For instance, take this form "A" of a Hopi decorative unit (of lightning), cut from one stick, and multiply it to secure "A"—"A"—"A"—"A," forming, when it is properly studied, a very good grille for a window; or the motive "B," also used as a repeated member.

Are these not suggestive of the value of simple methods in the securing of good outline and shadow in our details? Indeed, "B" is so self-evident a motif, and yet so seldom employed, as to hardly belong to any distinct school or period. "B" has been used in two or three different ways in the Museum details, with most amazing results — considering the simplicity of the design, made from a stick of quadrangular section, by two cuts of a knife or draw-shave to each chamfer! In many places it is more effective than any turned baluster could be. Yet it is a primitive detail, made by a primitive tool, the knife. Add the proper color on the cut parts, and the beauty of detail in the Santa Fé Museum is concretely indicated.

In illustration of the influence one properly designed building will exert, already there is a movement to build an hotel for Santa Fé in the same style as the Museum, which Santa Fé sadly needs, for it is a charming city, — with mediocre hostelries, — in an attractive country; the natural starting-point for many trips that richly repay painter, architect, or archeologist; for the desert — where *mesas* and canyons break the horizon line — appears as the very home of color, in its sands, clays, and vegetation; and there are literally hundreds of cave and cliff dwellings in neighboring national parks that are well worthy of an exhaustive and exhausting inspection by those who love our building, and whose researches and labor have explained for architecture much that would otherwise have been lost in its ruins, — the archeologists.

Dwelling-House, Taos, N. M.





Floor Plans of the Museum of New Mexico

SAN FELIPE

SANTA ANA

ACOMA

THREE OLD FRANCISCAN MISSIONS NEAR SANTA FÉ, N. M.

The Old Missions of New Mexico

And the New Santa Fé Buildings They Have Inspired and Suggested

Laguna

THE city of Santa Fé is situated in the center of a fifty-mile square, in which are still to be found a great many old Spanish Mission Churches and Indian towns. Since the advent of the automobile, what remain of these historic churches and pueblos have become much more accessible to tourists, and they have already interested and captivated a great many artists, archeologists, architects, and scholars by reason of their individual community historic and artistic values, their suggestion of the quaintly primitive life of their original inhabitants, and the magnificent natural coloring of the surrounding landscapes. It was the combination of all these factors that has caused a great many artists and scholars to make Santa Fé their home for a considerable portion of the year — some even having now become permanent residents.

The new Museum Building, known as the Museum of New Mexico, was constructed for the purpose of providing additional space for the housing of the large archeological collection of the Archeological Society of New Mexico, and the Santa Fé Society of the Archeological Institute of America, at present occupying the old Governor's Palace in the adjoining block. In addition to housing this collection of antiquities, the new Museum also provides sufficient space for permanent and transient exhibitions of paintings, and it will therefore serve as a center of the product of the Taos and Santa Fé art colonies, already numbering forty or more well-known painters.

The Museum itself is consciously intended to perpetuate in its design the architectural features and general aspects of the most important and characteristic of the old Mission Churches and pueblos, now fast falling into decay and final oblivion. It was designed as a composite regeneration of the fundamental features of these constructive and primitive architectural details and embellishments, as conceived by the early Franciscans and executed by the unskilled hands of a primitive people.

So the architects have reproduced — in one four-square structure — clear and intentional reflections of at least six of the best-known local Franciscan Mission Churches. — Acoma, San Felipe, Cochiti, Laguna, Santa Ana, and Pecos. Two of these ancient structures have already passed away — and the others are even now slowly but surely disappearing before men's eyes.

These old structures were built almost entirely of "adobe," or sun-dried brick, plastered over with mud, applied with the bare hands of the workers, and without the aid of any straight edge or trowel. In this manner a peculiarly characteristic undulating surface was obtained, full of irregularities of contour and color, that, together with the varied natural tints of adobe soil, produce an unusual surface texture, with a correspondingly beautiful variation of light and shade.

Last, but not least, the acts of time and erosion, together with the more or less constant repairs made necessary thereby, have in many instances produced a remarkable and quite unconscious beauty of line and form, entirely lacking in the usual hard angles and stiff plumb lines or levels, until the original formal conception sometimes has been almost entirely obliterated — nature thereby improving upon the work of man, and handing down to our generation a free-hand and plastic architecture, not to be seen anywhere else in the world!

The probable dates of the erection of a large number of these Mission Churches have been fixed by Mr. Ralph Emerson Twitchel, in his "The Leading Facts of New Mexico History," as between the years of 1598 and 1630. They undoubtedly represent a distinctive and local "American style" of indigenous architecture — produced naturally and unconsciously by the environment, the native building materials and labor, and the climate; and the designer's endeavor to adapt these precedents to modern conditions, as indicated especially in the several other buildings illustrated in our plates, — selected from such typically modern problems as a "Gas Office," a "School House," and an "Apartment Building"! — is an interesting and notable instance of an effort to perpetuate "Regional" architectural antecedents in this country, of the success of which the reader is entirely capable of judging for himself.

Santa Clara

It was the better to enable these new architectural experiments to be studied, in clear and direct contrast to their original sources of inspiration, that this small group of photographic views of the older local architectural remains has been collected and placed here, alongside the illustrations of this most recent work. At the least, it bespeaks a worthy revival of interest in the archeology of the region.

GENERAL VIEW

DETAIL VIEW, ACOMA TOWERS AND MAIN FRONT

THE MUSEUM OF NEW MEXICO, AT SANTA FÉ, NEW MEXICO

I. H. RAPP, W. M. RAPP AND A. C. HENDRICKSON, ARCHITECTS

VIEW OF FRONT AND SIDE

DETAIL VIEW, CORNER OF LAGUNA FRONT

THE MUSEUM OF NEW MEXICO, AT SANTA FÉ, NEW MEXICO

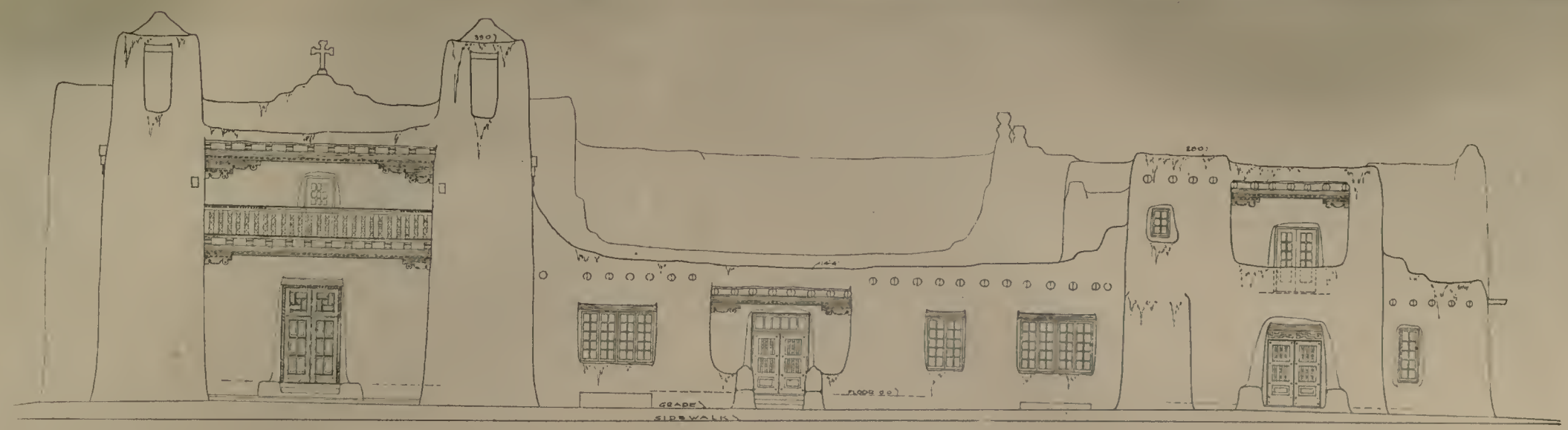
I. H. RAPP, W. M. RAPP AND A. C. HENDRICKSON, ARCHITECTS

WOMEN'S CLUB ROOM

PATIO

THE MUSEUM OF NEW MEXICO, AT SANTA FÉ, NEW MEXICO

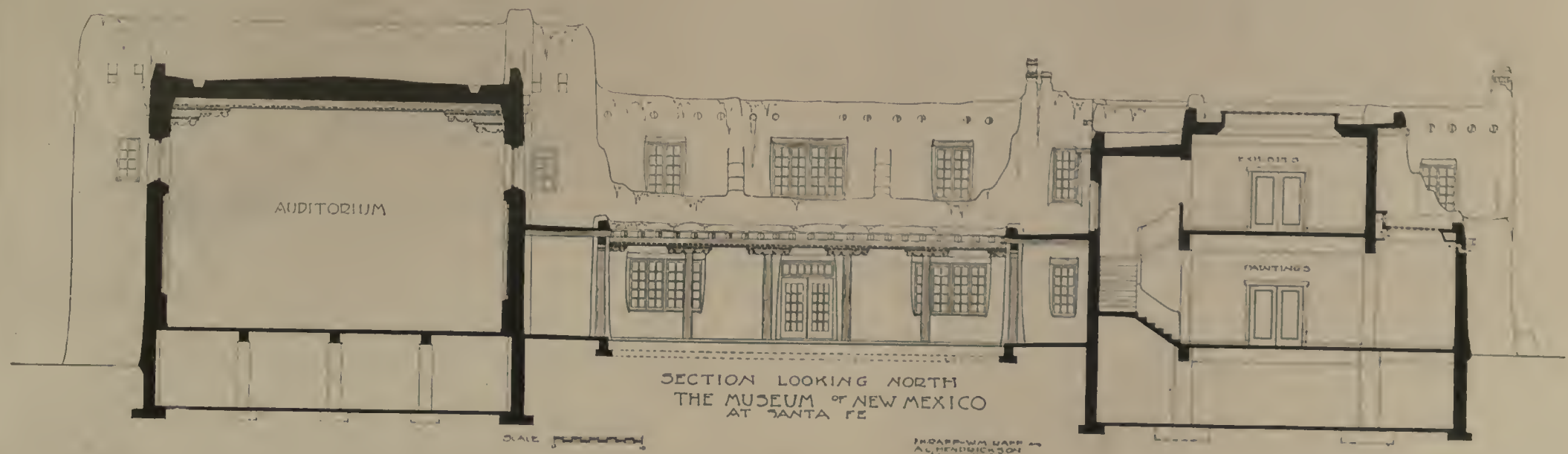
I. H. RAPP, W. M. RAPP AND A. C. HENDRICKSON, ARCHITECTS



PALACE AVE ELEVATION
THE MUSEUM OF NEW MEXICO AT SANTA FE

SCALE

I. H. RAPP—W. M. RAPP AND A. C. HENDRICKSON ARCHITECTS



SECTION LOOKING NORTH
THE MUSEUM OF NEW MEXICO
AT SANTA FE

SCALE

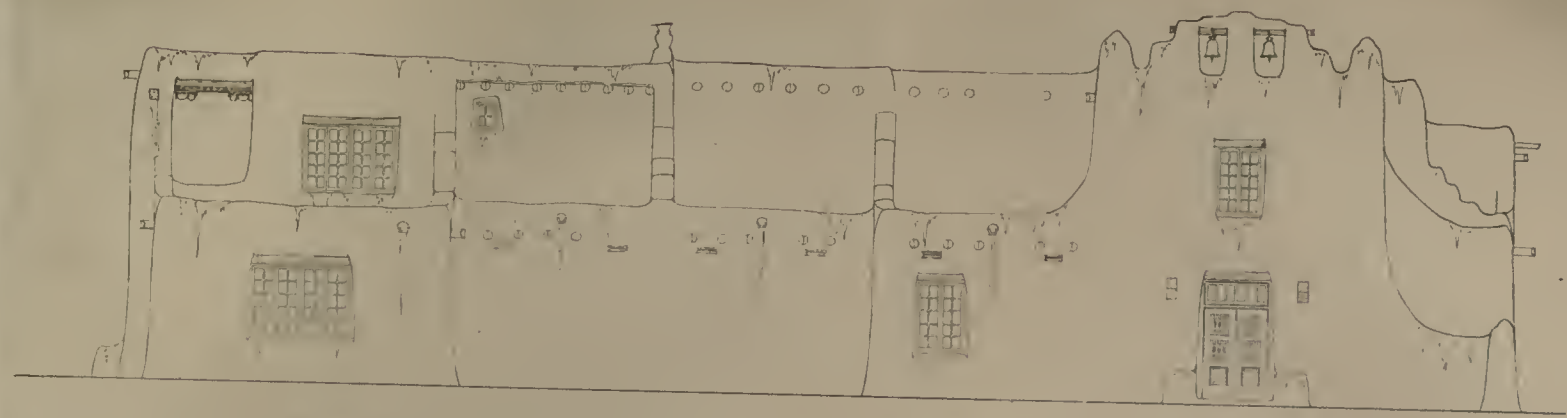
I. H. RAPP—W. M. RAPP
A. C. HENDRICKSON
ARCHITECTS

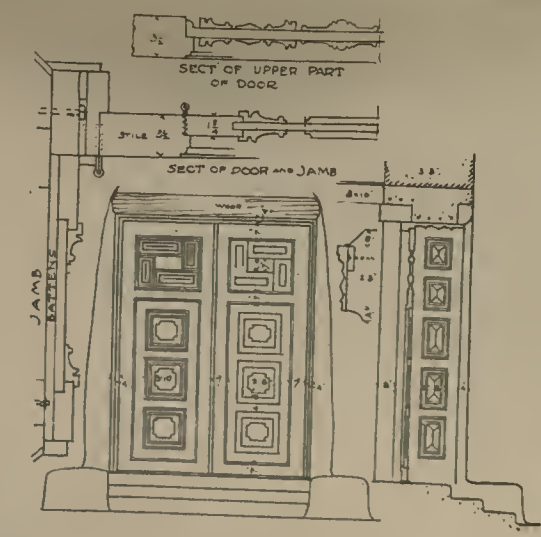
Reproduced at the scale of sixteen feet to the inch

MAIN ELEVATION AND COURT SECTION

THE NEW MUSEUM OF NEW MEXICO, SANTA FE, N. M.

I. H. RAPP, W. M. RAPP & A. C. HENDRICKSON, ARCHITECTS





Reproduced at the scale of sixteen feet to the inch
Entrance Door at eight feet to the inch, and details at sixteen inches to the inch

END ELEVATION AND SECTION THROUGH AUDITORIUM

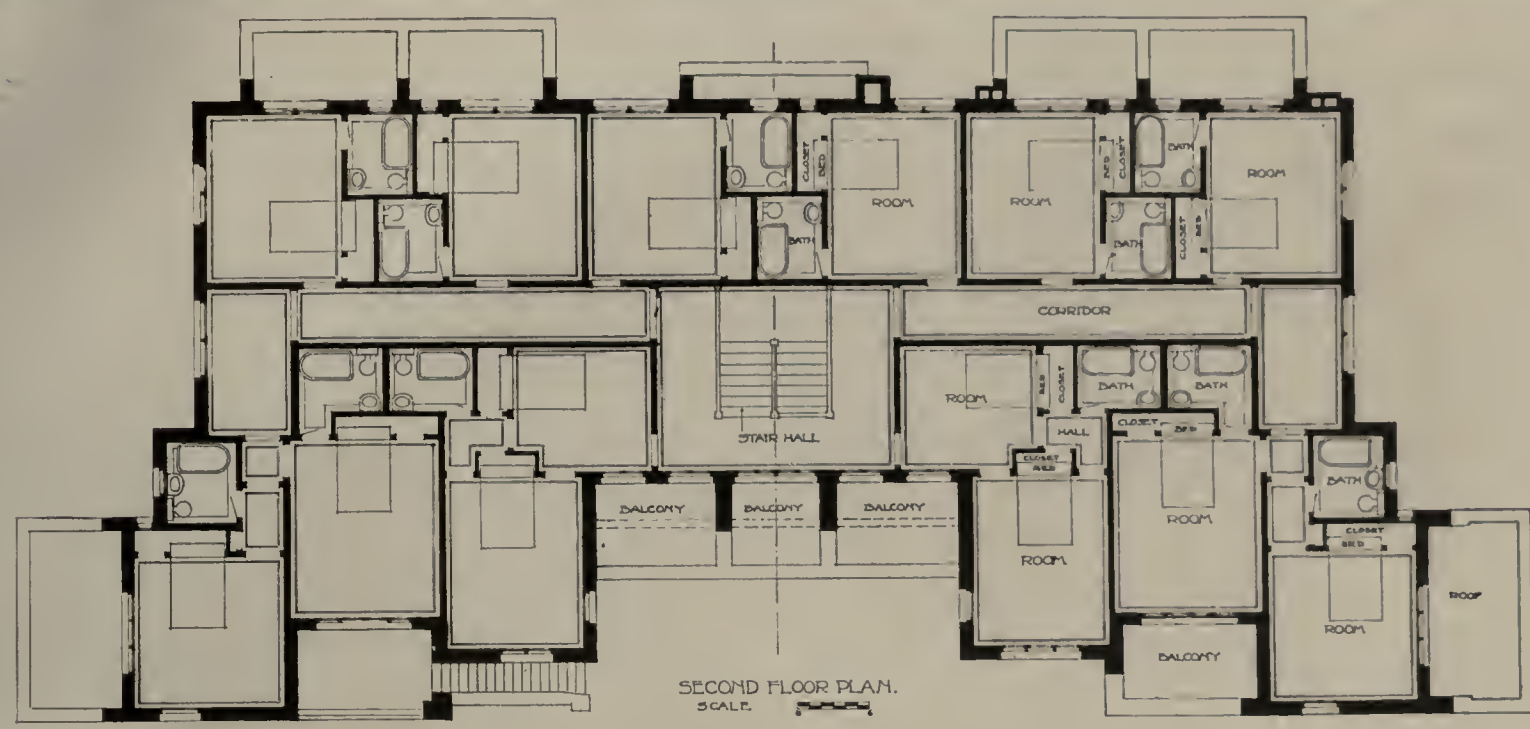
THE NEW MUSEUM OF NEW MEXICO, SANTA FE, N. M.

I. H. RAPP, W. M. RAPP & A. C. HENDRICKSON, ARCHITECTS

OFFICE BUILDING FOR THE SANTA FÉ WATER & LIGHT CO., SANTA FÉ, N.M.

DORMITORY FOR THE NEW MEXICO SCHOOL FOR DEAF AND DUMB, SANTA FÉ, N.M.
I. H. RAPP, W. M. RAPP AND A. C. HENDRICKSON, ARCHITECTS

PERSPECTIVE VIEW



SECOND FLOOR PLAN.
SCALE

FIRST FLOOR PLAN.
SCALE

APARTMENT HOUSE FOR
COL. R. E. TWITCHELL,
SANTA FE., NEW MEX.
I. H. RAPP, W. M. RAPP AND
A. C. HENDRICKSON ARCHITECTS

Floor plan reproduced at the scale of sixteen feet to the inch

APARTMENT HOUSE FOR COL. R. E. TWITCHELL, SANTA FÉ, NEW MEXICO

I. H. RAPP, W. M. RAPP AND A. C. HENDRICKSON, ARCHITECTS

GENERAL VIEW

DETAIL OF ENTRANCE PORTION

The Sena High School is an enlargement of an old army post building — the latter being indicated by the dotted hatched portion on the plan — which has for years been utilized as a school building, and the incorporation of which into the High School was a part of the problem set the architects.

MAIN FLOOR PLAN
SCALE

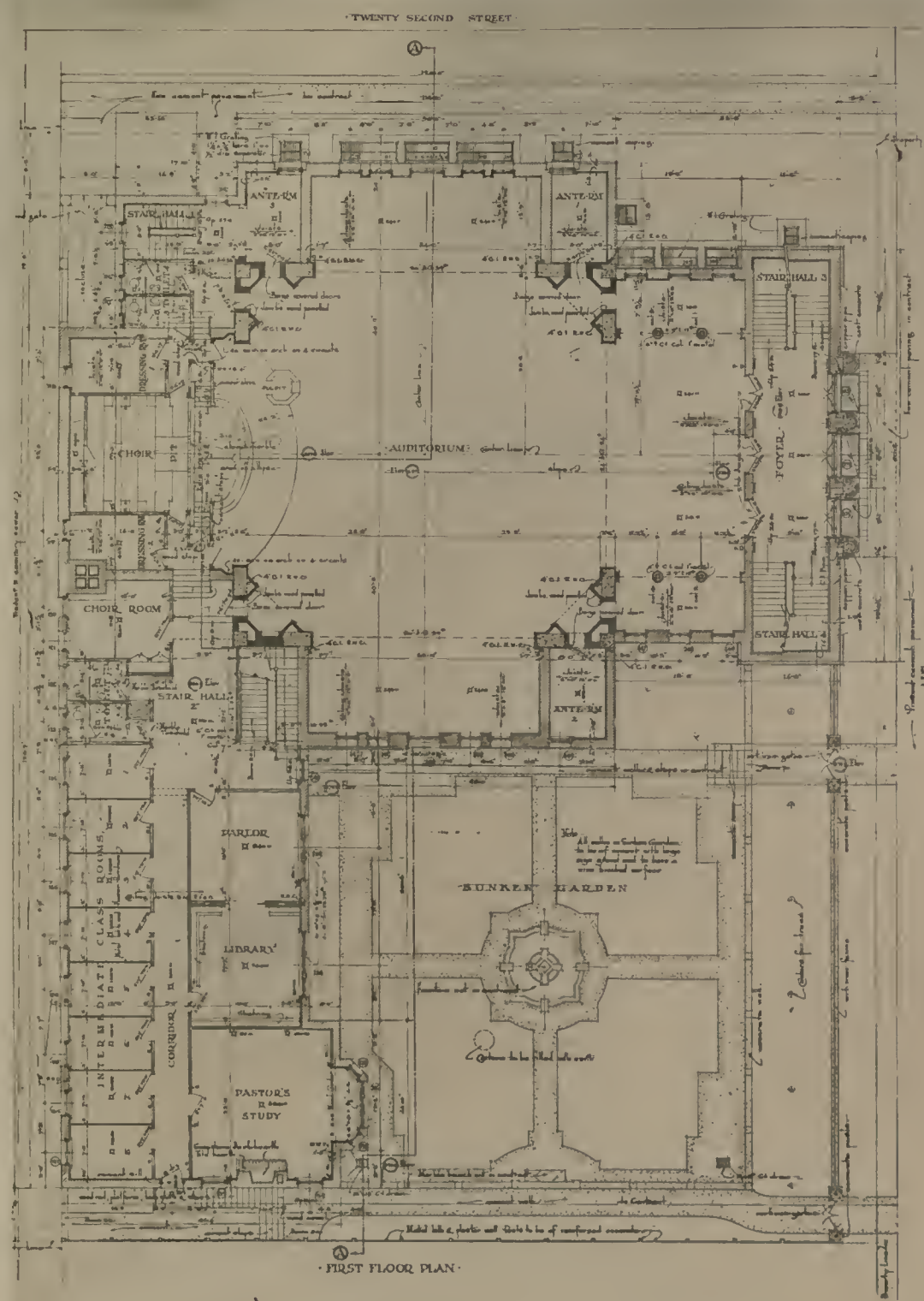
Plan reproduced at the scale of twenty-four feet to the inch

SENA HIGH SCHOOL
SANTA FE NEW MEX
I H RAPP W M RAPP AND
A C HENDRICKSON
ARCHITECTS

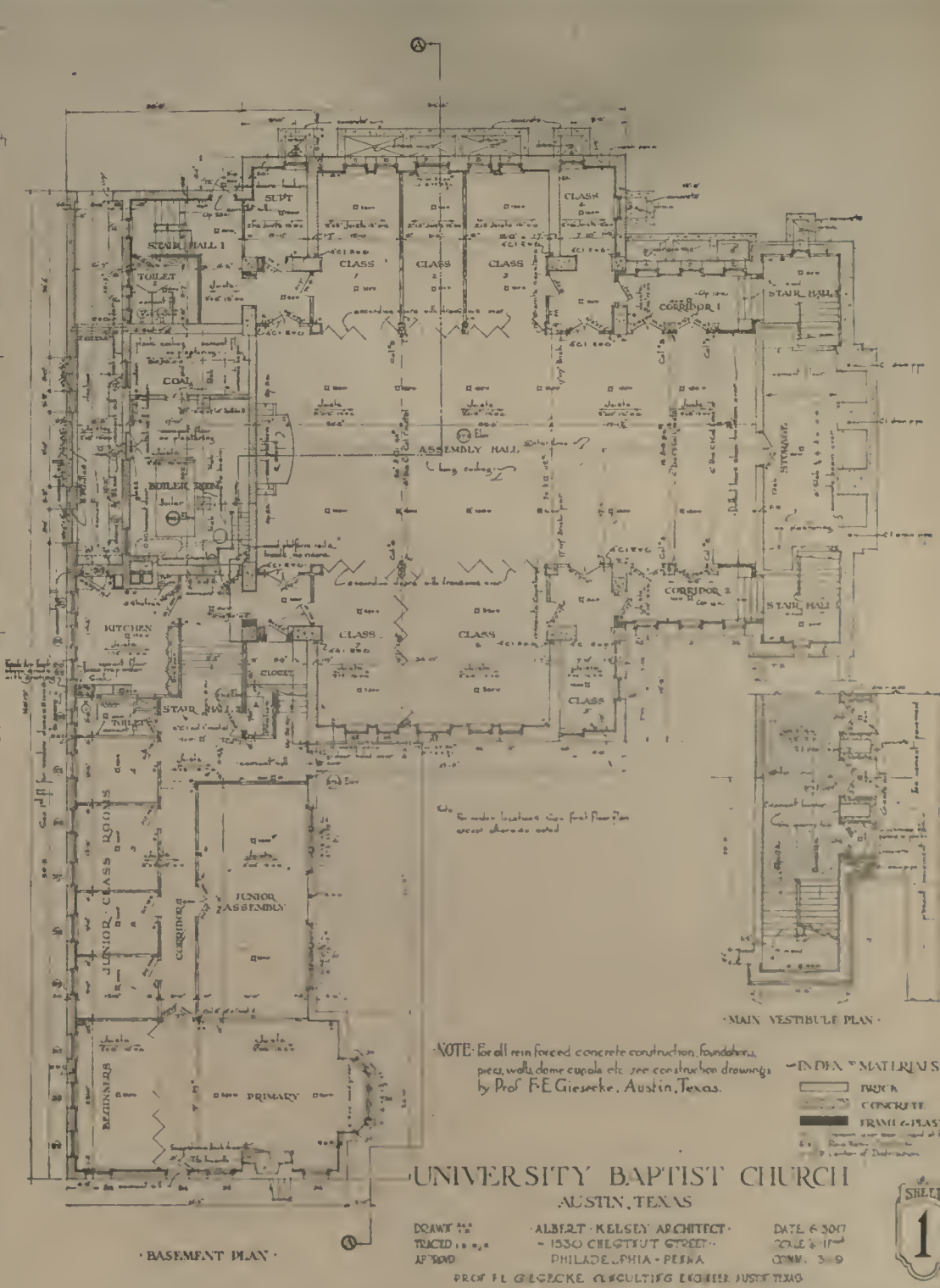
SENA HIGH SCHOOL, SANTA FÉ, NEW MEXICO

I. H. RAPP, W. M. RAPP AND A. C. HENDRICKSON, ARCHITECTS

PERSPECTIVE OF DESIGN FOR THE UNIVERSITY BAPTIST CHURCH, AUSTIN, TEXAS
ALBERT KELSEY, ARCHITECT



FIRST FLOOR PLAN

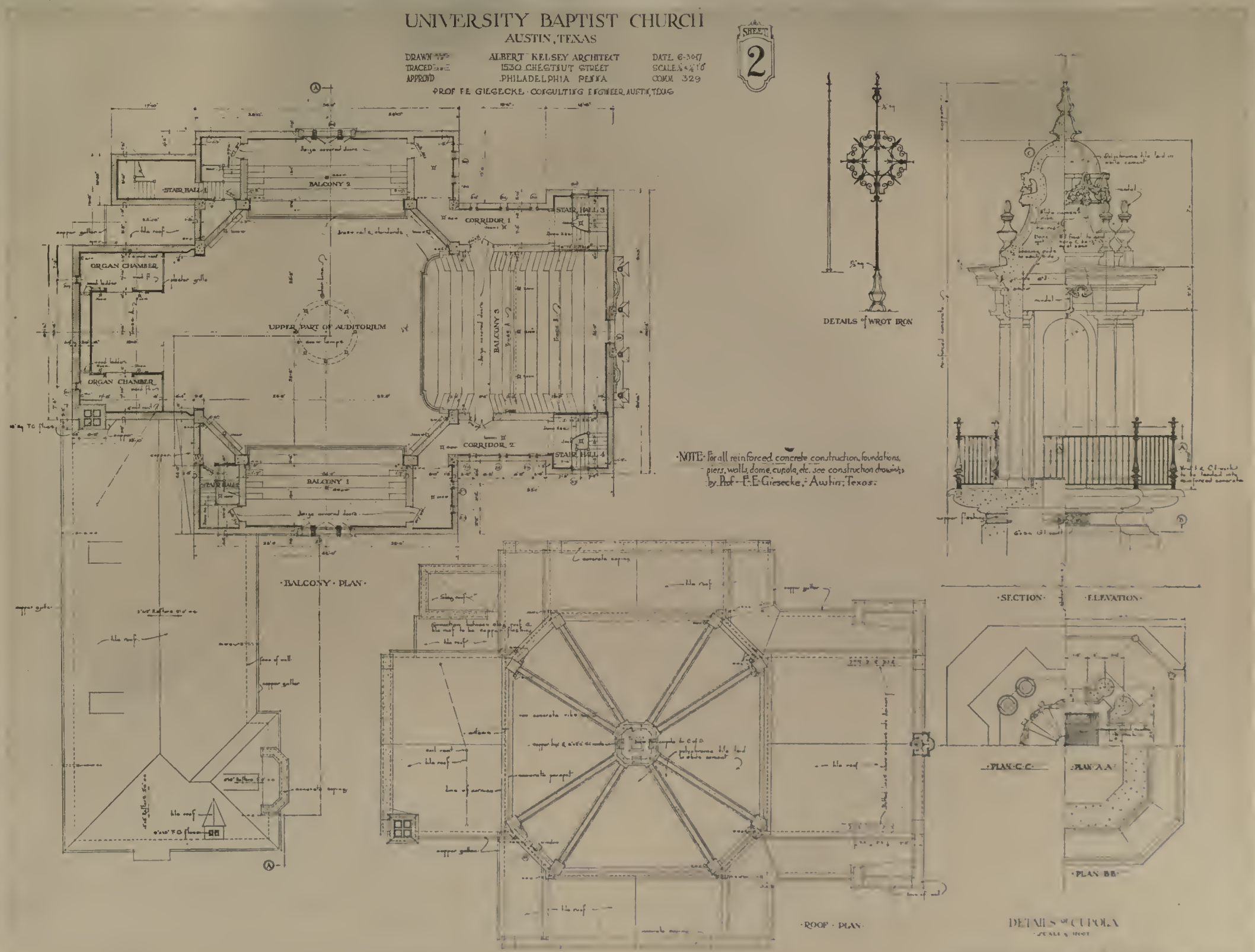


BASEMENT PLAN

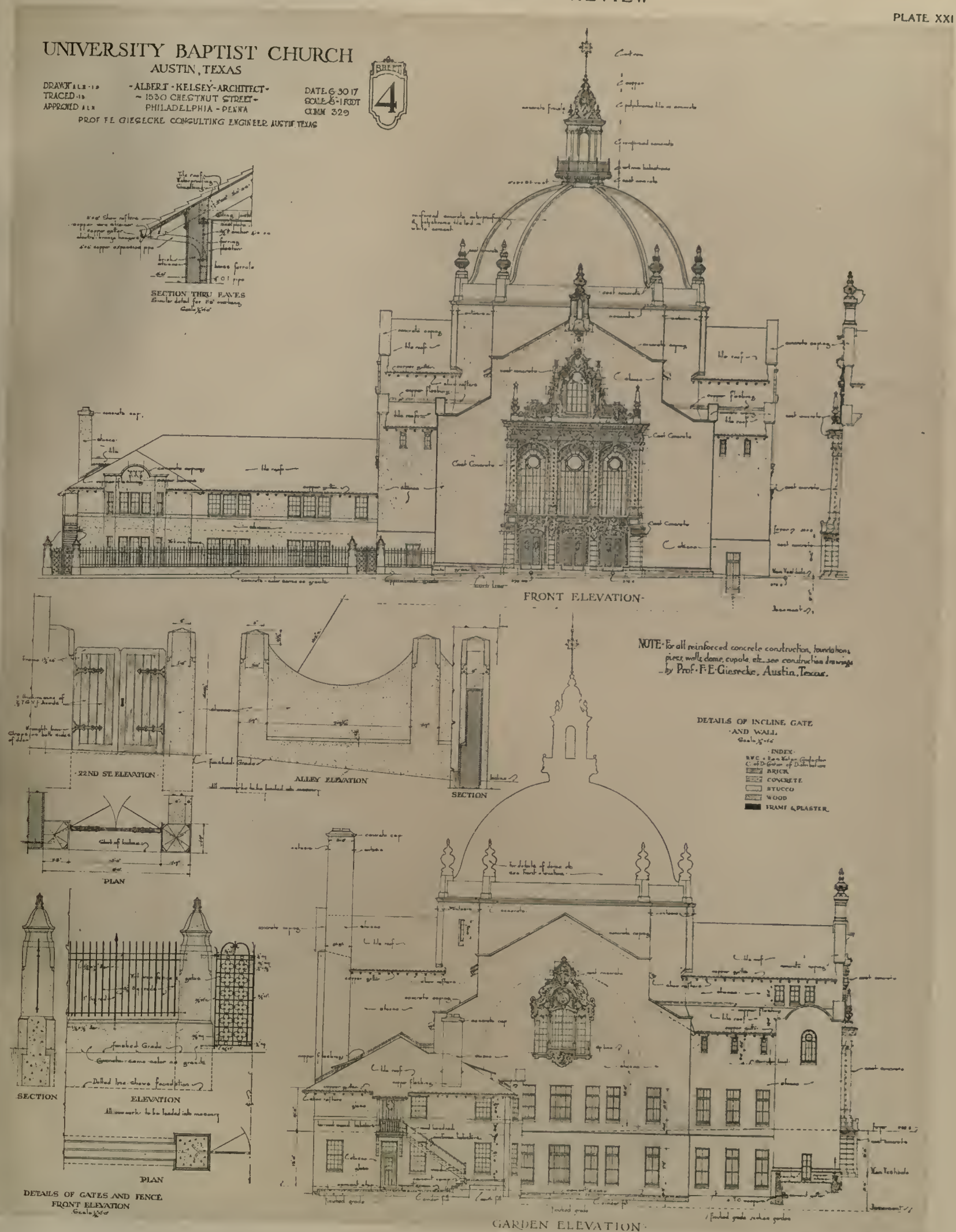
PRINCIPAL FLOOR PLANS

UNIVERSITY BAPTIST CHURCH, AUSTIN, TEX.

ALBERT KELSEY, ARCHITECT



BALCONY FLOOR AND ROOF PLANS
UNIVERSITY BAPTIST CHURCH, AUSTIN, TEX.
ALBERT KELSEY, ARCHITECT

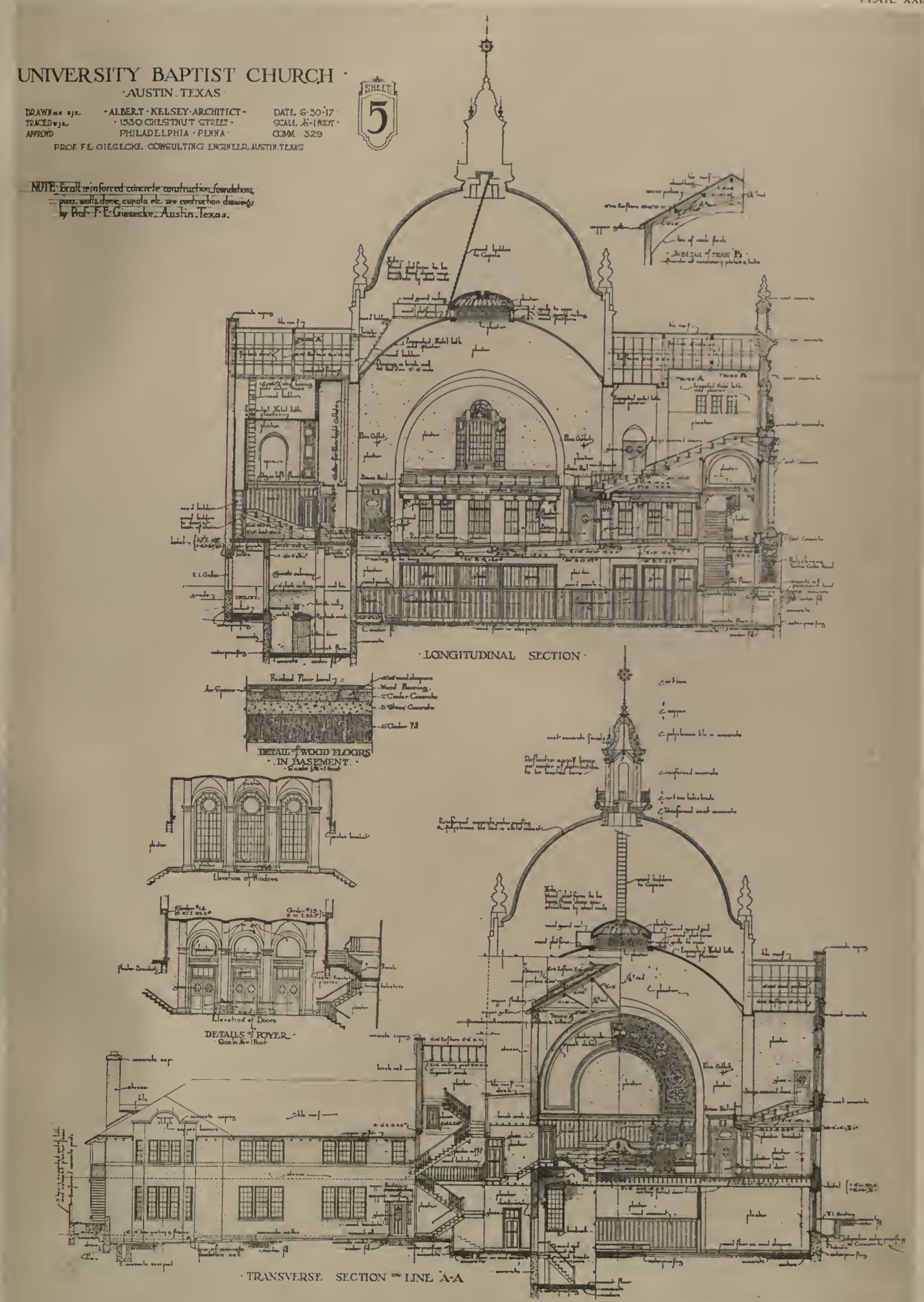


Elevations reproduced at the scale of twenty-four feet to the inch
Fence details at six feet to the inch

FRONT AND SIDE ELEVATIONS

UNIVERSITY BAPTIST CHURCH, AUSTIN, TEX.

ALBERT KELSEY, ARCHITECT



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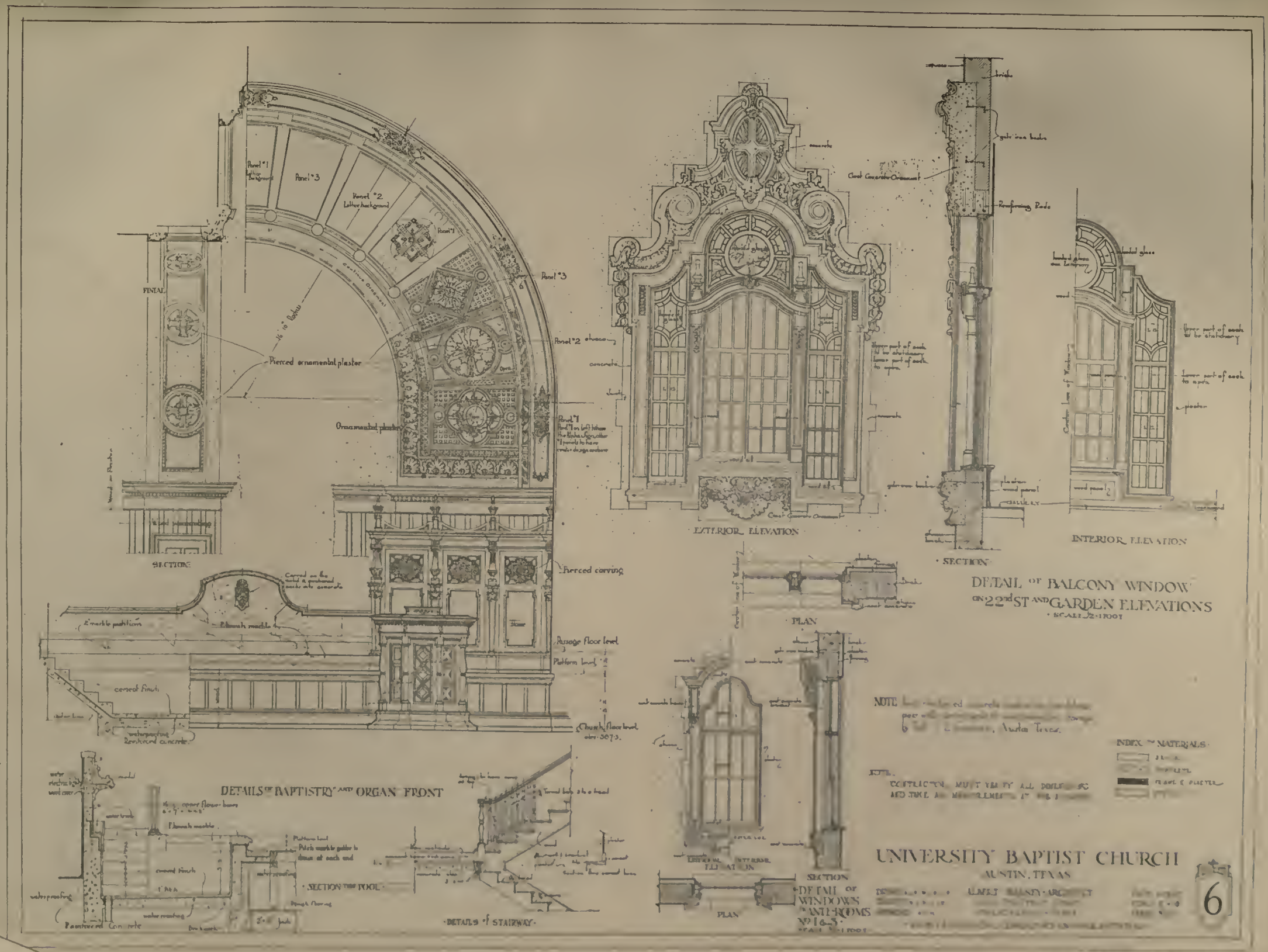
SECTIONS

UNIVERSITY BAPTIST CHURCH, AUSTIN, TEX.

ALBERT KELSEY, ARCHITECT



DETAILS SHEET, SHOWING BAPTISTRY POOL
UNIVERSITY BAPTIST CHURCH, AUSTIN, TEX.

GENERAL VIEW SHOWING GARAGE

GENERAL VIEW OF LIVING SIDE

RESIDENCE OF MRS. P. E. ORVIS, SCARSDALE, N.Y.

ALBERT JOSEPH BODKER, ARCHITECT

DETAIL VIEW OF GARAGE

DETAIL OF ENTRANCE

PLATE CLI

THE ARCHITECTURAL REVIEW

RESIDENCE OF MRS. P. E. ORVIS, SCARSDALE, N.Y.

ALBERT JOSEPH BODKER, ARCHITECT

LIVING ROOM GABLE

REAR GABLE AND SERVICE

PLATE CLII

THE ARCHITECTURAL REVIEW

RESIDENCE OF MRS. P. E. ORVIS, SCARSDALE, N. Y.

ALBERT JOSEPH BODKER, ARCHITECT

LOOKING INTO DINING ROOM FROM LIVING ROOM

LIVING ROOM SHOWING FIREPLACE

THE ARCHITECTURAL REVIEW

RESIDENCE OF MRS. P. E. ORVIS, SCARSDALE, N. Y.

ALBERT JOSEPH BODKER, ARCHITECT

GABLE AND SERVICE END

LIVING ROOM END

THE ARCHITECTURAL REVIEW

RESIDENCE OF ARTHUR ELLIOTT, ESQ., RIVERDALE, N. Y.

DWIGHT JAMES BAUM, ARCHITECT

DETAIL OF ENTRANCE

REAR VIEW, SHOWING GARAGE

THE ARCHITECTURAL REVIEW

RESIDENCE OF ARTHUR ELLIOTT, ESQ., RIVERDALE, N. Y.

DWIGHT JAMES BAUM, ARCHITECT

VIEW OF APSE
CHURCH AT JAZENEUIL (VIENNE)

APSE AND TRANSEPT
CHURCH OF NOTRE DAME SUR L'EAU, DOMFRONT (ORNE)

Allwood

An American "Garden Village" Near Passaic, N. J.

By Ralph F. Warner

Of the Firm of Geo. B. Post & Sons

IN England a self-contained industrial community established by a single manufacturer is known as a garden village. It is usually located in rural districts, where land may be acquired at acreage prices. It has its factory and residential sections, public and semi-public buildings, and all the other features which make town and village life attractive. Bourneville,* near Birmingham, the home of the Cadbury Cocoa works, and Port Sunlight,† near Liverpool, where Sunlight Soap is made, are the best-known English examples of this type. Fairfield, Hopedale, Midland, Gary, Morgan Park, Marcus Hook, and other recent towns in this country, are attempts in this same direction, although unfortunately none of them measures up to the standard set by the English examples. Allwood is probably the most recent garden village enterprise in America, using the term in the same sense that it is used in England, to distinguish the development from the more frequently recurring type of American industrial housing venture where houses for employees are erected as an afterthought, on suburban land, and as near as possible to some old and well-established factory. The motive, however, for the establishment of Allwood, as in the examples just cited, is the same. The employer has felt the increasing burden of costs, and the inefficiency among employees, found in densely populated areas, and has sought a satisfactory solution in the establishment of a new town in outlying or rural sections, where land may be had at low cost.

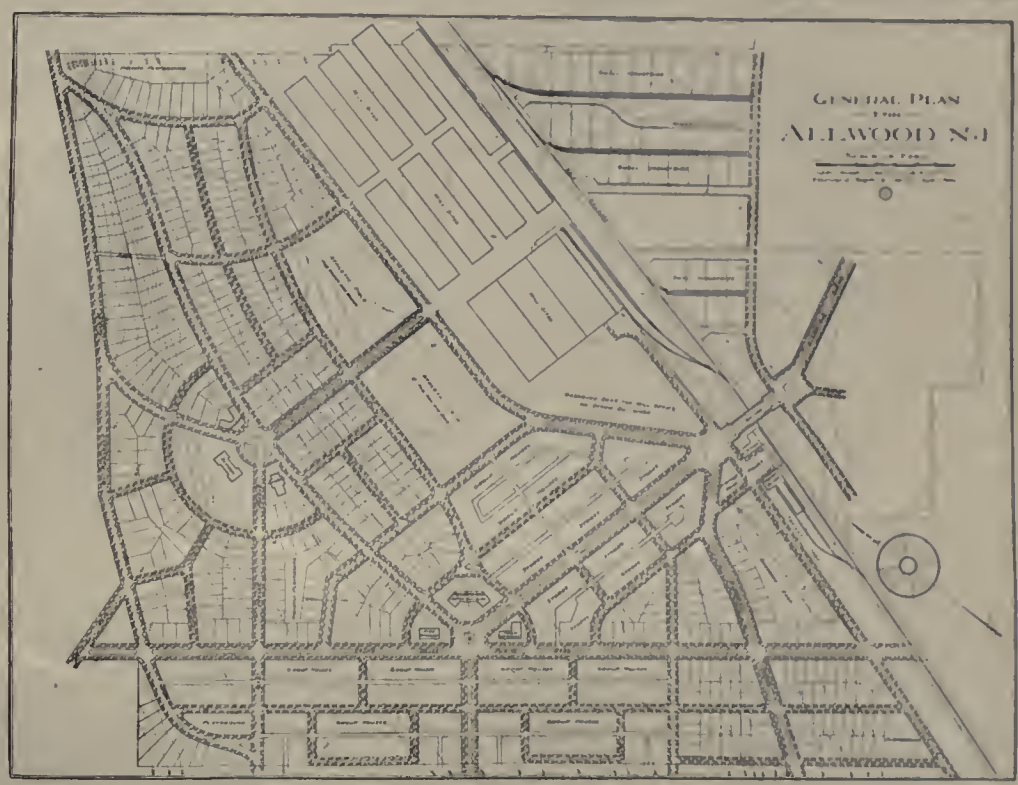


Fig. 1. General Plot Plan Arrangement of Allwood, N. J., Showing Contour Lines
John Nolen, Landscape Architect

The plans now being carried out at Allwood, N. J., are due largely to the vision of Wm. L. Lyall, president and treasurer of the Brighton Mills, manufacturers of cotton and special fabrics. This company has heretofore occupied a site within the city limits of Passaic, N. J., in an intensively developed manufacturing district, where land values are high, drawing its help, in competition with scores of other factories, from monotonous miles of compactly built-up homes in all directions.‡

A combination of these conditions decided the Brighton Mills Company to start a new town on rural land. A factor of importance also, particularly in the textile industry, which affected this decision, is that weaving and similar operations require overhead light, and are therefore most successfully housed in one-story buildings. Where land values are low, it is possible to obtain this type of building, giving an abundance of light over the entire floor area, and on every machine, at least cost.

While the Allwood project was being formulated, officials of the Brighton Mills personally visited English garden villages and suburbs, and made a first-hand study of the organization, planning, and administration of Bourneville, Port Sunlight, Hampstead, and other well-known enterprises. Subsequently, a subsidiary holding and development company was organized, known as the Peru Realty Company, afterwards supplanted by the Allwood Mutual Homes Company. This company acquired three hundred acres of land three miles west of the center of Passaic. Actual work on the development was started in 1916, when John Nolen, landscape architect of Cambridge, Mass., was engaged to prepare the town plan; Morris Knowles, consulting engineer of Pittsburgh, to lay out the sanitary system; and Murphy & Dana, architects of New York, to prepare plans for the houses.

Fig. 2. Block Where First Housing Was Constructed
Only the rows of houses shown in Figs. 4 and 7 have yet been constructed

The site has roughly the form of a square, each side measuring about 3,600 feet in length, or slightly less than three quarters of a mile. Practically all the land was formerly used for agricultural purposes. The price ranged from $700 per acre to $2,000 per acre. The average for the whole was about $1,000 per acre.

The village is reached from Passaic by Bloomfield Avenue. A motor-bus line is now operating on this route, starting in the business center of Passaic and terminating at Allwood. The visitor to Allwood, arriving from Passaic, leaves the Bloomfield Avenue motor-bus near the Erie Railroad crossing at a point about midway the easterly edge of the tract, where a broad entrance plaza on both sides of the track will be located at this easterly focus of the main streets of the village.

To the north and east of the entrance plaza is a section with unbroken surface and relatively low elevation, bisected by a single track railway to Newark and Paterson, that is the logical factory location. Immediately to the west and south of the entrance plaza, the land is practically level, and, requiring only a minimum of cutting and filling for intensive development, is therefore adapted to store sites. In the extreme southwesterly section the land ascends gradually to a considerable elevation, broken occasionally by a rise or descent. It is well adapted to

*See "Town Planning," by Geo. Cadbury, Jr., published 1915, by Longmans Green & Co., and †"Port Sunlight," by W. L. George, published 1909, by Alston Rivers, for a full discussion of these two projects.

‡See "City Planning Progress," by Geo. B. Ford and Ralph F. Warner, published in 1917.

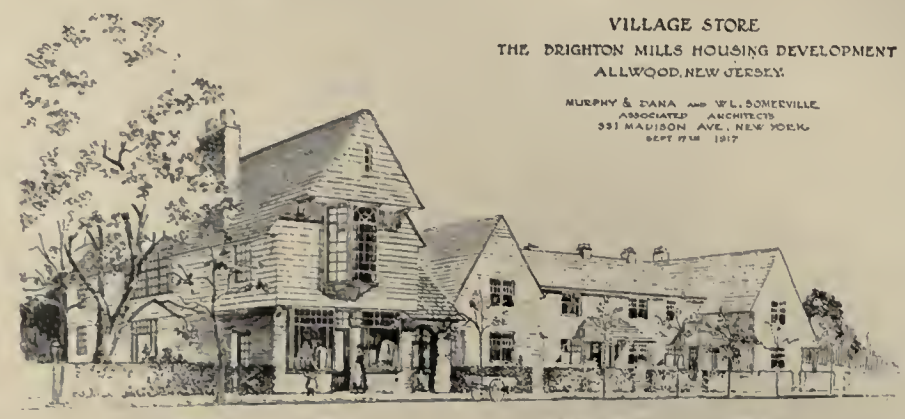
a quite intensive development, and has been set apart for houses arranged in groups or terraces. To the north and northwest the land rises — at first quite gradually, and then rapidly — to a ridge marking the westerly boundary of the village, and from which a fine view is obtained across the distant country toward New York. This whole section is particularly fitted for the best type of development, and has been platted with lots suitable for detached or semi-detached houses.

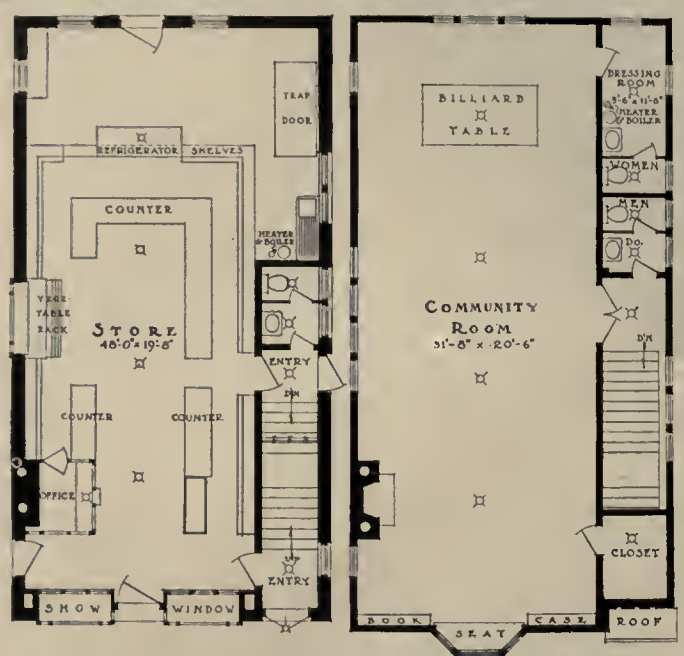
Town-Planning Features. At Allwood, garden city principles of development have been followed closely. The plan provided (a) an industrial section, affording ample space for present and future factory needs, with good rail connections for the transport of raw and manufactured products; (b) a residential section, comprehensively planned, with accommodations to meet the requirements of various classes of operatives; (c) a community center, with stores, schools, assembly hall, churches, and the like; and (d) areas for recreation, including small parks, athletic fields, and playgrounds.

Industrial Section. A total of 64.4 acres along the northwestern portion of the tract has been set aside for industrial use. Of this, a piece nearly 2,000 feet long and 900 feet wide, west of, and parallel to, the Erie Railroad tracks, is reserved for the Brighton Mills. One factory building one story in height, and about 600 feet long and 500 feet wide, has been completed, — being the one shown nearest the entrance plaza on the general plan, — with a street connection therewith 50 feet wide. A triangular shaped parcel, with an area of about five acres, between the plaza and the new mill building, is being held for the mill office and other future buildings.

A twenty-five acre tract of triangular shape, opposite the Brighton Mills, and on the east side of the railroad tracks, is reserved for small industries. Here a small manufacturer, supplying materials needed in the mill, may acquire a site adequate to his needs, with railroad siding and street access. Such factories will offer an additional source from which to draw tenants for the village, and will bring into the neighborhood a class of independent employers and employees, whose presence is intended to allay suspicion of paternalism — otherwise easily nurtured in communities dominated by a single industry.

Residential Section. If it were possible to conduct at Allwood the business of manufacturing, independently of the housing of operatives, the industrial section might be the only, or at least the dominant, feature of the plan. But where a thousand homes with all requisites for town life must be provided, problems of such intricacy and proportions are involved that this latter phase of the operation almost overshadows the first.





FIRST FLOOR PLAN SECOND FLOOR PLAN

Plans reproduced at the scale of sixteen feet to the inch

Fig. 3. Perspective and Main Floor Plans, Village Store and Temporary Community Center

Murphy & Dana and W. L. Somerville, Associated Architects

Briefly, the factors fixed upon as necessary for advancing the planning of the residential section were:

(1) Freedom from any suspected form of capitalistic paternalism; the investment in housing was to be so planned as to return a fair economic rental,— which it was intended should be nine per cent on the cost of the house, land, and improvements.

(2) Cost of house and land to be adapted to the wage-earning capacities of the various classes of employees. At Allwood, employees still receive the usual wages of textile workers, — $15, $18, and $20 a week in most cases. A few weavers only receive as much as $23 a week.

It has been generally agreed that workers on small wages cannot afford to pay *more* than one week's wages for a month's rent. The following table shows an analysis, in round numbers, of the cost of houses and land as it was obtained and accordingly determined for the four groups of wage-earners mentioned above:

TABLE SHOWING DETERMINED COST OF HOUSE AND LAND

Weekly wage	*Monthly rent*	*Year's rent*	*Determined cost of house and land*
$15	$15	$180	$2,000
18	18	216	2,400
20	20	240	2,666
23	23	276	3,066

(3) Actual cost of undeveloped land per acre, average $1,000.

To provide an attractive house within the cost figures given in the last column of the above table, on land at a thousand dollars an acre, undeveloped, requires the utmost economy in the location and design of the streets, in the allocation of spaces for community uses, and in the planning and design of the houses.

The Street Plan. Fortunately, where the land is broken by considerable variations in elevation, as at Allwood, from 10 to 15 per cent of the development cost (or from $250 to $500 an acre) can be saved by placing the roads where they follow the easiest and most natural grades.* A glance at the general

*The penalty for failure to observe this simple rule cost the American Sheet & Tin Plate Company over $30,000 in a development comprising 100 houses recently completed at Donora, Pa. In this industrial housing development the mistake was made of attempting to lay out all the streets on the usual rectangular system, without any regard to natural variations in topography. Ten additional houses could have been added for the money so wasted!

Fig. 4. General View of Block Shown in Fig. 2, Showing First Construction Development

plan of Allwood will show how the roads parallel the contours with great gain in picturesqueness and in possibilities for added architectural interest. Of course old roads, whose alignment is permanently fixed, like Bloomfield Avenue, Stonehouse Plains Road, and West Passaic Avenue, influenced the location of nearly all streets; but as they invariably followed the lines of least resistance, they were an asset rather than an obstacle to the proper economical development of the property.

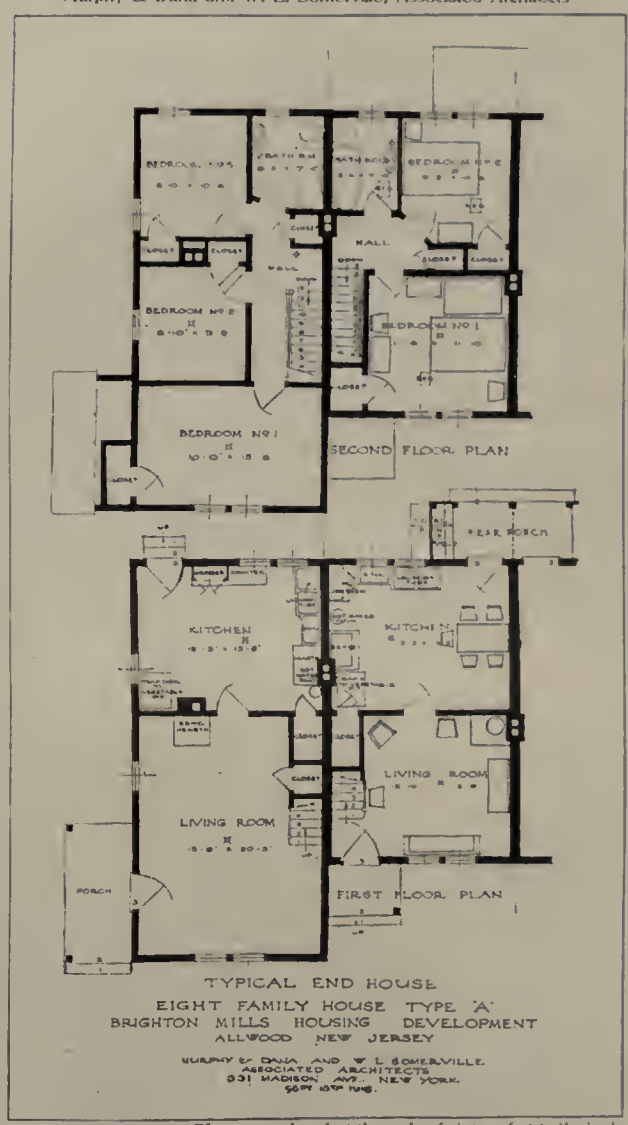
Fig. 5. A Typical Eight-House Row
Murphy & Dana and W. L. Somerville, Associated Architects

The Allwood street plan makes use of another simple principle of town planning, *viz.*, that roads should be differentiated in width according to the intensity of travel. The Allwood plan shows streets 100, 80, 60, 50, and 40 feet wide. The main business street is 100 feet wide; the county roads and connecting streets, 80 feet; certain of the boundary and diagonal streets, 60 feet; and the great majority, only 40 feet wide. This differentiation puts the street width where it is needed, saves in development cost, and increases the quietness and privacy of the side streets. The arrangement suggests, of course, reducing the actual width of paved roadway surface to the minimum required for the easy passage of vehicles, leaving the unpaved area in grassed strips — as has been done in the Allwood plan. At the same time, under this arrangement, the space between opposite houses, where light, air, and privacy are needed, is maintained.

Table of Sub-Divisions and Length of Streets of Various Widths

Total width	*Side-walk width*	*Grass width*	*Road-way width*	*Lin. ft. each type*	*Per cent amt. total lin. ft.*
100	16	36	48	1,500	3.5
80	12	36	32	3,500	8.5
60	12	16	32	12,000	30.0
50	10	16	24	8,000	19.0
40	8	16	16	16,000	39.0
		Total,		41,000	100.0

At Allwood, in the section given over to detached houses, the lot 50 by 100 feet has been adopted. It gives from 10 to 15 feet on the side of the houses, making the distance between adjacent houses from 20 to 30 feet. It gives a lot depth which is economic with respect to the parallel streets, and it affords opportunity for considerable set backs from the street line, while permitting the rear yard to be used for gardening or other purposes without undue crowding. About 10 per cent of the lots, whose dimensions are determined largely by the uneven contour of the land and the peculiar shape of the blocks, are 60 feet wide and 100 feet deep.



Plans reproduced at the scale of sixteen feet to the inch
Fig. 6. Plans of Typical End and Interior Row House

In the blocks for group houses and stores, the lots are served by a 12-foot alley, and are the same depth. The exact width has here not been determined by the landscape architect, but left to the architect, who adopted a 16-foot frontage.

To segregate the classes of wage-earners, the cheaper houses in groups are located apart and distant from the detached houses, and near the store groups. All the rolling land to the north and west has been given to detached and semi-detached houses, with 50-foot lots. All of the land from the entrance plaza through the neighborhood center and down to the southern border of the property, forming a strip about 1,200 feet wide, is devoted to group houses, stores, and community buildings. This puts the group houses nearer the center of community life, while separating them from the more open type of development.

The street curvatures introduce blocks of curved outline and shape, approximately four acres being allowed for each, with a normal depth of 200 feet, and of between 500 and 600 feet in length.

There are 498 lots, with an average frontage of 50 feet and a depth of 100 feet, for detached houses; and 540 lots for terraces and stores, with a frontage of 16 feet, allowing occasional open spaces of 25 feet between adjacent groups. This makes a total of 1,038 lots, giving accommodations for 5,000 persons, allowing an average of five persons to a family. As there are 233.1 acres in the residential section, including streets and parks, the number of houses to the gross acre is five; and considering saleable lots only, of which there are 154.8 acres, the number of houses to the acre is seven.

The growing appreciation of concentration of community endeavor through the grouping of related structures has here found expression in two focal points. One, the neighborhood center, is on the axis of the main artery from the entrance plaza, where a neighborhood center building, town hall, and fire house will be erected on a site of two acres. The other, an educational center, is on a site of three acres, centering on the 80-foot street from the factory district. Considering the size of the community, the provision here of only a single school and a single church site seems hardly to be sufficient.

Fig. 7. View Showing Rear of Eight-House Group
Murphy & Dana and W. L. Somerville, Associated Architects

A village store and community building, now under construction, provides a large community room on the second floor, reached by a separate staircase from the street. The community room is 20 feet wide and 52 feet long, and will be used for dances, meetings, motion pictures, and the like. This room is planned for temporary use and can be later converted into a housekeeping apartment.

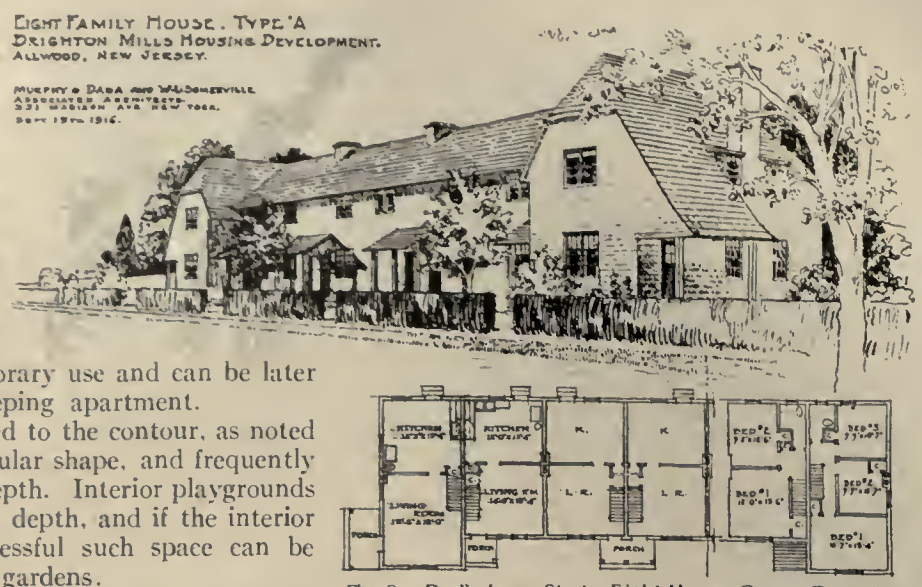


Fig. 8. Preliminary Study, Eight-House Group, Type A

The streets being adapted to the contour, as noted above, form blocks of irregular shape, and frequently make lots of undesirable depth. Interior playgrounds will utilize such excess lot depth, and if the interior playgrounds are not successful such space can be converted into allotment gardens.

Two five-acre athletic fields are provided—one for women and girls, the other for men and boys—between the education center and the factory district, on either side of a parked street, 80 feet wide, which links the industrial section and the residential district. Including the industrial section, the following table shows the distribution of spaces according to use:

TABLE SHOWING DISTRIBUTION OF AREAS

	Acres	*Per cent of total*
Streets	58.3	19.8
Playgrounds and athletic fields	20.	6.6
Saleable lots	154.8	52.
Industrial usage	64.4	21.6
	297.5	100.0

Omitting the industrial section, the following computation shows the distribution of spaces:

	Area in acres	*Per cent of total*
Streets	58.3	25.01
Athletic fields and playgrounds	20.	8.6
Saleable lots	154.8	66.4
	233.1	100.01

The first groups of houses to be erected face the athletic fields and overlook the site for the mill office buildings, in the block showing an interior allotment garden, bordered by a service alley on all sides.

The difficulty of designing houses suited to the wage scale tabulated, and costing only $2,000 to $3,000 for land and house, is appreciated by those who have made any study of workingmen's dwellings. In the first place, with development costs at $3,000 an acre, and 15 houses to the gross acre with 16 feet frontage each, the development cost per lot is $200. At $1,000 an acre, an additional $67 is to be added, making a total of $267 for each lot. This leaves $1,733 for the house for the wage-earner earning $15 a week, and $2,133 for the man making $18 a week. With men earning $20 and $23 a week, the detached house on a lot 50 feet by 100 feet becomes a possibility, as they can afford a house and lot costing $2,600 and $3,000 respectively. At seven houses to the gross acre, land and development costs amount to about $600 per lot, leaving approximately $2,000 and $2,400 for houses for these classes of wage-earners.

Four groups of eight houses each (or thirty-two dwellings in all) have been erected. The plan shows that the end houses project 8 feet, are 15 feet wide by 34 feet deep, and have an area of 544 square feet. The interior houses are 16 feet by 26 feet, and cover 416 square feet. They have an attic, but no cellar. The lack of a cellar encourages the tenants to pile rubbish, firewood, boxes, and the like at the rear of the houses. The photograph showing the rear of the groups already erected illustrates how valuable a cellar, even of limited cubage, is for this purpose. The only underground storage is a small vegetable storage-bin below the kitchen floor, reached by a trap door. There are no furnaces, heat being supplied by a kitchen range and a stove located in the living-room, warming the second-story chambers by means of registers in the floor. The rear porch has a small coal-bin, which is a most necessary accessory to a cellarless house.

The floor plans are compact and simple. In the interior houses the combined living and dining room has a floor area of 217 square feet, the kitchen, 186 square feet. In the end houses, the living-room has 314 square feet, and the kitchen, 190 square feet. The second floor has two bedrooms in the interior houses and three bedrooms in the end houses. The minimum bedroom floor area is 86 square feet, and the maximum, 155 square feet.

A simple farmhouse type served as the basis for the exterior treatment, where all but the most necessary detail has been eliminated. In Allwood, interior houses were designed to rent for $12 and the end houses for $15 a month. Work was begun, however, just with the rise in prices, so that they cost about 25 per cent more than the original estimate. The interior houses were built for $1,600, and the end houses, with one additional room, for $2,200. The cubic-foot cost was 15.4 cents. The total cost of house and lot for the interior houses was $2,000, and for the end houses, $2,600.

The four groups are identical, except for variations in the color of the exterior trim. They are of frame construction, on concrete foundations, covered with white cedar shingles, unstained. One of their best features is the slate roofs, of random small sizes, in gray and green stock, from Pennsylvania quarries, of a variety ordinarily discarded by dealers.

Cold water is provided in kitchen and bathroom, and hot water from a small storage tank and water back in the house range. The kitchen has a sink, built-in dresser, vegetable storage-pit, etc. All bedrooms have closets.

The company has a coöperative feature which requires the tenant to pay an additional sum, amounting to one-fourth his rent, toward stock in the Homes Company equal to two years' rental. Thus, in the case of a tenant with a $15 rental, the monthly payment toward this stock would be $3.75, which is applied to the purchase of $360 worth of stock that, at 5 per cent interest, the tenant acquires in about six years, when the privilege of acquiring stock on the same basis may be extended. This aids the tenant to save, and creates and maintains his interest in the upkeep of the property.

Fig. 9. Preliminary Study for Two-Family House, Type B

The "Business" of Architecture

Part IV. Section 2

By Daniel Paul Higgins

IT is, of course, axiomatic that order and regularity cannot be obtained without a proper system. Scientific records cannot be secured unless the function is segregated and placed in charge of a competent expert, whose responsibility it should be to find an immediate and accurate answer to every possible inquiry concerning records. The comprehensive plan having been scientifically determined, there will result an exact record of each unit of organization, and the aggregate of those units, successfully developed from the aggregates of those for each department, will thus become the record for the entire system. It is from these records, and comparisons of the aggregate records, that the architect can shape his policies of management and determine the rules that are necessary for him to employ for the successful conduct of his business.

Many present practices have grown up haphazardly from modest beginnings, with few records to guide the operations. So long as the architect would keep sufficiently well informed by other means, this matter of incomplete information did not much matter; but in these days, when the clients' requirements are greater and when the personal element is almost lacking in adequacy, there is need for more accurate records, concisely and intelligently given, to permit the architect to keep in touch with his business and to give almost his undivided attention to design and the securing of new work. There are many architects' organizations where this system is working to the utmost satisfaction and where there is hardly a trace of the old, inadequate methods of the past.

The opinion has been expressed by some architects that they do not see why they should bother with statistics when they have all the work they can possibly take care of and more. The word "more" contains the kernel of the answer to this argument. If they had kept the proper kind of statistics, they would undoubtedly have been prepared to do more work by being able to anticipate an increase, and enlarge their organization in time properly to meet it.

When architects start systematically to increase their efficiency and organize business knowledge as the motive power of all other forces, they should keep in mind several purposes. The first principal purpose is to gain new information, the second is to gain clearer or more complete ideas about things already known, and the third is to correct false or erroneous ideas. Frequently all these purposes are accomplished at one and the same time, for as they gain new information, they must give up erroneous notions, and vague and confused ideas become clear and well defined.

It is now generally agreed that helpful knowledge grows out of and rests upon individual experience, including, under "experience," the impressions derived from reading, listening, and benefiting from the experiences of others.

Take an example in point. A successful American architect, when asked how it was possible for him to execute the large volume of work that came from his office, and yet give the necessary attention to design and the refinement of detail in the final execution of his work, explained that it was only due to the perfection of his organization that he was able to conduct his practice effectively. For many years in his early practice he had had difficulty in keeping his practice on an even keel — having followed the tendencies active in many architect's organizations, of disregarding the importance of specialization of function, and allowing his affairs to be conducted by an individual whose notion was that business in an architect's organization is merely a clerical matter, and the actual execution of the work a matter of mechanics. As a result, his practice for many years was at a standstill — even though he was personally rated as a clever designer and promoter. Clients voiced their dissatisfaction with his unprogressive business and construction methods, and employees worked with a disinterested spirit, owing to the laxity of effort to enlist their interest and excite their enthusiasm. All these conditions naturally combined to jeopardize his profits, and caused an endless number of potential or actual complications.

After many sleepless nights this architect finally decided that, to continue his practice, a readjustment of his whole organization was necessary. His first step toward a better balanced practice was to engage a business specialist proficient in a knowledge of architects' and builders' organizations, who, in the course of a thorough investigation, disclosed and turned up all the weak elements of his organization. A reorganization was effected, departmentalizing Business, Design, and Job Supervision, and placing at the head of each department a man scientifically trained in his specialty, with specific responsibilities.

The building up of his business department was one of the corner-stones of his success. It is a thing that did not "just grow," but is the product of a well-defined plan consistently developed. Back of it is an idea, which is part of the policy of his practice. This department is a signal bureau, as it were, pointing out infallibly those conditions which are to the largest extent responsible for the non-success of any practice. It raises the storm signal at the first sign of their approach, so that they may be met and overcome.

Serving as a clearing-house for all other forces, it is also a central point for all systems and office routine. Correspond-

STATEMENT OF BANK ACCOUNTS

AS ON AUGUST 1st, 1917

ACCOUNT NO. 1

July	1 -	Balance (see previous statement attached)	$ 5,000.00
"	5 -	John Doe's check deposited, in full of bill 7/1/17	2,000.00
"	15 -	J. C. Price's check deposited, in full of bill 7/1/17	3,000.00
"	20 -	R. C. William's check deposited in full of bill 6/1/17	8,000.00
		Balance in this account 8/1/17	18,000.00
Aug.	1 -	Check requested this date for acct.#2	3,000.00
		Balance	15,000.00

ACCOUNT NO. 2

July	1 -	Balance (see previous statement attached)		500.00
"	1 -	Check from acct. #1. deposited		3,000.00
				3,500.00
DISBURSEMENTS:				
July	8 -	Payroll	$ 600.00	
	1 -	Misc. Creditors (See detailed memo. attached)	908.26	
	15 -	Payroll	606.40	
	22 -	" "	694.00	
	29 -	" "	650.00	3,458.66
		Balance 8/1/17		$ 41.34

Fig. 10. Statement Summarizing Office Business Accounts

STATEMENT
SHOWING FINANCIAL CONDITION OF JOBS
JAN. 1 1916

JOBS	RATE OF COMM	COST OF CONSTRUCTION	ARCHITECTS COMMISSION	ARCHITECTS COST TO DATE	PERCENTAGE FINISHED	ARCHITECTS APPROXIMATE COST TO COMPLETE	PERCENTAGE OF COST TO COMPLETE	PROFIT TO COMPLETE	PERCENTAGE OF PROFIT	LOSS TO COMPLETE	COMMISSION RECEIVED TO DATE	COMMISSION DUE THIS DATE	COMMISSION DUE FROM THIS DAY TO COMPLETE
JOB # 5	10%	100,000.00	10,000.00	3,400.00	90%	600.00	10%	4,000.00	40%		9,000.00	500.00	500.00
" # 6	6%	200,000.00	12,000.00	1,800.00	30%	4,200.00	70%	6,000.00	50%		3,000.00	600.00	3,400.00
" # 7	6%	37,000.00	2,220.00	2,316.64	100%	—	—			116.64	2,200.00	—	—
" # 8	10%	60,000.00	6,000.00	3,500.00	100%	—	—	2,500.00	41⅔%		3,500.00	500.00	—
" # 9	10%	50,000.00	5,000.00	3,936.00	96%	164.00	4%	3,900.00	78⅔%		7,200.00	480.00	320.00
" # 10	10%	316,996.19	31,699.61	13,559.36	100%			18,140.35	37½%		21,000.00	699.61	—
" # 11	10%	37,000.00	3,700.00	350.00	10%	3,150.00	90%	200.00	5%		—	370.00	3,330.00
" # 12	6%	600,000.00	36,000.00	9,000.00	50%	9,000.00	50%	18,000.00	60%		10,000.00	3,000.00	15,000.00
" # 13	6%	300,000.00	18,000.00	3,240.00	30%	7,560.00	70%	7,200.00	40%		5,000.00	400.00	12,600.00
" # 14	6%	40,000.00	2,400.00	500.00	20%	2,000.00	80%			100.00	—	250.00	3,120.00
" # 15	10%	150,000.00	15,000.00	6,600.00	50%	1,650.00	20%	6,750.00	55%		10,000.00	2,000.00	3,000.00
" # 16	10%	20,000.00	2,000.00	840.00	60%	560.00	40%	600.00	30%		1,000.00	200.00	500.00
" # 17	10%	14,556.24	1,455.62	613.60	100%			871.96	55%		1,455.62	—	—
" # 18	10%	15,000.00	1,500.00	1,200.00	20%	450.00	30%	900.00	40%		—	300.00	1,200.00
" # 19	10%	102,155.00	10,215.50	5,456.75	96%	111.37	2%	4,647.15	46%		9,000.00	1,010.50	205.00
													50,475.00
								ACCOUNTS COLLECTABLE THIS DATE				15,340.11	
								BANK BALANCE " "				10,000.00	
								TOTAL QUICK ASSETS				25,340.11	
DELINQUENT ACCTS REPOSTED IN PREVIOUS STATEMENTS								" " LIABILITIES				6,335.00	
								NET " ASSETS				19,005.11	
Job # 1												1,500.00	
" # 2												600.00	
" # 3												500.00	
" # 4												300.00	
								GROSS LIQUID ASSETS				21,905.11	

Fig. 11. Office Statement, Illustrating Condition of All Work in Progress

ence and all other matters, incoming and outgoing, are received, checked, and distributed by the individual in charge. All matters pertaining to accounts, both as regards office and jobs, are recorded and supervised. All certificates and extra orders, after the supervising architect approves the same, are signed and issued through this department.

The basis of this efficient business organization is an adequate system of records. These reports are indispensable to the architect in keeping him in touch with what goes on in his practice generally. They provide a constant and accurate indication of conditions, and are the means of enabling the heads of other departments to be familiar, automatically, with every detail necessary to its most successful operation.

In this method two bank accounts are conducted as business accounts, — No. 1 and No. 2. The first is to receive all deposits, while the other is to provide for all business expenditures. Account No. 1 is controlled by the architect — and for convenience a power of attorney is provided the business authority responsible for Account No. 2. When funds are needed for Account No. 2, a statement showing the condition of both bank accounts is rendered the architect, beginning with the previous balances and noting deposits made thereafter, from which expenditures are shown in detail as deducted, leaving the present balances. A requisition is then made for additional funds for Account No. 2 to cover future expenses. An illustration of the working of the method is shown in the sample statement reproduced as Fig. 10.

That American architecture has come at last to a new era of development is proved by the seriousness with which this and other progressive architects are adopting so-called principles of efficiency. A full knowledge of the costs and production quantities in the office, and of their relationship to one another, necessarily takes a high place among those principles.

That there is a mathematical relationship between work and cost probably no one will deny, although architects and their practical assistants are generally too busy at producing to discover for themselves exactly where that relationship exists. It is to assist all hands in gaining a true perspective that the business authority presents every month a statement to the architect showing him clearly the financial condition of all active work then under way, by means of which he can intelligently familiarize himself with the financial progress of jobs from month to month, and can keep enlightened as to the prospective profits that should be available on the completion of the work. Its other important function is to keep the architect at all times in touch with his working capital, which is covered in a column provided for "funds receivable" to date, less current liabilities.

The story is simple, but like most simple things it is hard to understand until seen in its full perspective. For this reason it has been pictured in the following charts, shown as Figs. 11, 12, and 13.

In the event of a job indicating a loss prior to its completion, it is both interesting and essential for the architect to know exactly where the difference lies. By the aid of an accounting system made to fit the business—and not one where the business is made to fit the system — an analysis can be made which will show the exact cost of producing each drawing; thereby placing the architect in a position to distinguish between the inefficient and efficient employee, as well as to discover immediately any tendency to leakage in his profits. By going further with this analysis, a summary of the total cost, itemized as to the cost of promotion, design, specifications, and mechanical equipment, working drawings, proportion of overhead, blue-prints, etc., is made, showing each unit, relating it in its proportionate percentage to the whole. (See summary contained in Fig. 12.)

In addition to the general job statement, as rendered to the architect monthly, a card system is provided, with a card for each job, whereon similar information as to job finances is recorded as a source of reference and guidance for the

SUMMARY			
SALARY			
PROMOTION	37.50		
DESIGN	460.42		OR 29% OF TOTAL SALARY
SPECIFICATION & MECHANICAL EQUIP	198.89		12½% " "
WORKING DRAWINGS	884.81	1581.62	52% " "
PROPORTION OF OVERHEAD		670.61	42% " "
BLUE PRINTS		64.41	
		2316.64	

Fig. 12. Summary of Itemized Statement of Cost on Job No. 7 (See Fig. 2)

supervising architect. This record method keeps in arrangement, in condensed form, in a way that would be impossible for the supervising architect to do himself, all the information that he will need when directing his operations. Such a sample card is shown in Fig. 13.

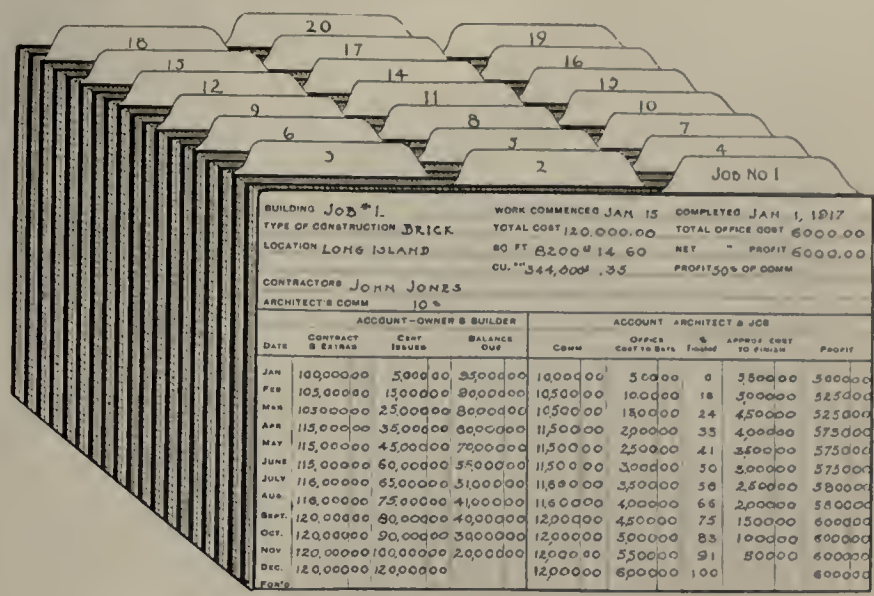


Fig. 13. Office Record Reference Card

In addition to the various financial reports, it is equally important that the architect continue to have a close and correct grasp of existing conditions in his other departments as they change from time to time. This information is furnished him through a system of reports made by his department heads whenever important — and at least as often as once a week. With the exception of reports made by the business and designing departments, all other department reports are made through the supervising architect's department and are then passed to the business department, where they are placed in a loose leaf book (Fig. 14) always kept before the architect on his desk, where these up-to-date detailed reports are arranged, ready for instant reference, in the order of the departments.

This report book is an efficient aid to the architect as, by reference to it, he is kept constantly in a position to convey to a client that he is personally in touch and familiar with all phases of the conduct of his work.

The business authority should have general supervisory charge of the stenographers, boys, etc., as well as the general business policy of the office. In order to attain genuine efficiency from all the employees in his charge, painstaking education of every employee in the nature or function of his or her job is given, so as to create a proper vision as to its meaning, and its responsibilities or possibilities in relation to the whole office system.

To do all things successfully, commencement must be made with the youngest and rawest material, — the office boy and the junior draughtsmen. In most architects' organizations they are merely turned loose, without training or preparation, or any recognition of the fact that they are only boys, and consequently must be expected to act as boys. If ever any progress is to be expected of them, they must be made to realize that there is a future for them in the office, if they will earn it by application and ambition, and that their promotion hangs upon this acquirement of knowledge of their functions, as well as the diligent performances of their duties.

This business authority takes a personal interest in the boys and their education, and over many years of his experience the good results of such a course have further cemented his theory that the office boys are the real beginning of an efficient and successful working organization. This may all seem to involve a lot of time and trouble, but it is the best kind of time and trouble that can be spent, for it means that the architect is fitting his younger assistants and boys to serve him in a high class and intelligent manner — imbuing them with the spirit of his practice, its ways and its methods. And after all is done, it will be no unexpected matter for him to find it easier to get more intelligent assistance from these younger and more impressionable men than from older and more experienced helpers — whom he will often find too inflexibly dominated by their own ideas, or accustomed to different methods.

The boy* placed in the entrance room may also attend to the switchboard as well as receive and welcome all visitors. If you have ever visited the office before, he calls you by name and welcomes you cordially, but not effusively. He either remembers or deftly inquires the nature of your visit and introduces you to the proper person, or he will, to the best of his ability, secure you the desired information. He is instructed to refer all important telephone calls from clients to the proper business authority. Clients visiting the office are first received by the business authority (who is always in attendance), and, in the absence of the architect or any other person necessary to be interviewed, he, through his experience and familiarity with general conditions, is in a position efficiently to attend to their requirements.

There are many other important functions, perhaps too obvious and numerous to mention here, that under the old system were neglected, and under this modern system are properly and efficiently taken care of.

To complete the efficiency of this department, an attorney who has had considerable experience in matters pertaining to architecture and building is retained on a reasonable annual basis, to advise and direct all legal affairs, — a measure that has proven valuable and has often even turned out to be a preventive of later serious legal difficulties.

Since, under this completely developed office organization, the business executive directs all the system and business of the architect's entire practice, the heads of all other departments are left entirely free — within the definitely established limits of their own department jurisdiction — to pursue their individual and important specialties, with a minimum of interruption and annoyance, and with a maximum of efficiency.

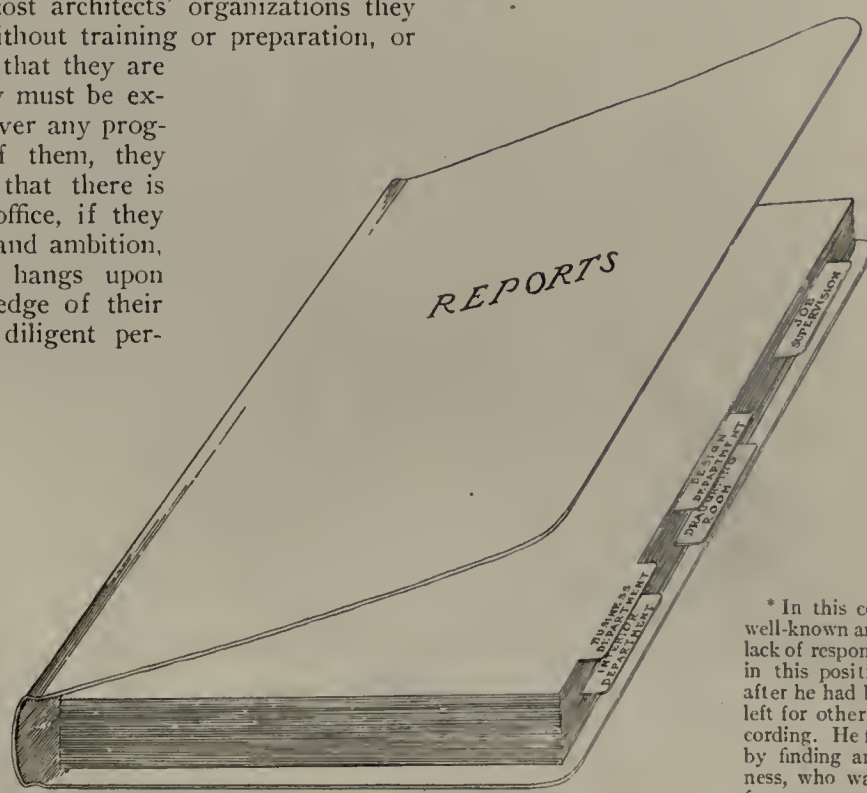


Fig. 14. Architect's Loose Leaf Record of Current Reports

* In this connection the experience of another well-known architect, who had long suffered from the lack of responsibility and the carelessness of the boy in this position, and the frequency with which — after he had become accustomed to his duties — he left for other fields of endeavor, is worth while recording. He finally successfully solved his problem by finding an elderly man, too old for active business, who was delighted to perform these duties, for a comparatively modest salary, and who was able to act as librarian as well. — Ed.

The Study of Colonial Architecture. Part I

By Fiske Kimball

It is regrettable that so much of the work done by practitioners and students in measuring and photographing Colonial buildings is so often of personal benefit only, when it might equally well be made of general value to the profession. Certain well-known details, houses, and regions are sketched and drawn over and over again; while virgin fields — equally fruitful for the individual — await publication to the body of architects at large. Much of the current talking and writing on the subject is, moreover, confused by inexact uses of terms and statements, which therefore do not tend to advance our general knowledge of the subject. In connection with the immediate interest in the study of Colonial work aroused by our American Scholarship Competition, we have therefore asked Mr. Fiske Kimball — who will be recognized by our readers as an authority from the researches he has made in the study of early American buildings — to treat of the general subject of nomenclature, and set down acceptable authorities and means for determining the exact and accepted dates of construction of historical examples.

Our Present Knowledge: Its Records and Bases

IT is most unfortunate that so much energy and good will are wasted in unsystematic study of the fast vanishing remains of our Colonial architecture, as by more methodic expenditure of the same effort results having permanent value could be secured for the benefit of all.

Much needless personal labor could be saved by a greater familiarity with the existing publications covering various phases of the subject. Rather than measure and draw *de novo* a building of which some adequate drawings have already been published, it is better to devote one's time to supplementing what has already been done, and covering details not hitherto presented. The necessary acquaintance with published works to insure that effort will be wisely directed is not difficult to acquire, as the number of such books is still relatively limited. There is, of course, first the Georgian Period, an *omnium gatherum* in which specific examples are fortunately made accessible by the indices in Volumes I and III. Other general collections of drawings which contain material from many regions, and thus require to be looked into before one begins work anywhere, are Frank Wallis' two early books and Donald Millar's recent volumes. Similar general repositories, but containing reproductions from photographs instead of measured drawings, are "The Architecture, Interiors, and Furniture of the American Colonies During the Eighteenth Century," published by G. H. Polley, and the numbers of the White Pine Monograph series.

Beyond these books of more inclusive scope, it is only necessary to examine books which bear on the specific region where it is proposed to work. For New England there are the volumes of measured drawings by R. C. Kingman, by Lois Howe and Constance Fuller, and the large photographic views contained in Corner and Soderholz's "Domestic Colonial Architecture in New England." For Philadelphia and its neighborhood the corresponding volumes of measured drawings are by Goforth and McAuley, and Sims and Willing; of photographic views by Joseph Everett Chandler (in his "Colonial Architecture of Maryland, Pennsylvania, and Virginia"); and of smaller photographs, with important text, by Wise and Beidelman. For Maryland, besides Chandler's work and Corner and Soderholz's similar volume, there is the smaller book, with text, by J. M. Hammond. For the District of Columbia H. F. Cunningham and others have recently provided a volume of measured drawings. For Virginia a similar volume, by Messrs. Holden and Ward, is in preparation, which will supplement the photographic collections by Chandler and by Corner and Soderholz, already mentioned, as well as the numerous smaller views in R. A. Lancaster's "Historic Virginia Homes and Churches," and other volumes of text. For the far South there are the large photographs of Crane and Soderholz's "Colonial Architecture in South Carolina and Georgia," and the well-rounded book of photographs, drawings, and text in the Huger Smiths' "Dwelling Houses of Charleston." Certain more restricted regions and smaller towns have also been the subject of special architectural volumes, which the searcher will do well to consult before inadvertently duplicating their contents. Most of them, as well as the works mentioned here, are described in detail in the articles by Richard F. Bach on the literature of Colonial architecture, running through the volumes of *The Architectural Record* for 1916 and 1917.

Even more than in special books, the various architectural magazines have published, from their very foundation, important drawings, photographs, and articles dealing with individual buildings or groups of buildings, now buried in long series of unindexed volumes. A number of the most significant items are listed by Mr. Bach in his series just mentioned, in issues of July and August, 1917. A similar guide on a more comprehensive scale, to unlock the vast store of Colonial material in old peri-

Fairfield (Carter's Creek), Virginia, 1692

Typical of the more ambitious houses of the Southern Colonies during the seventeenth century, which were essentially transplanted Jacobean manors. The date given by iron figures in the gable is authenticated by the accompanying insignia of the then owners, Lewis and Abigail Burwell. The building, which had already lost one wing of its typical H (or E) plan, was finally destroyed by fire a few years ago.

Stenton, Philadelphia, 1727-28

Early eighteenth-century Colonial, showing the abandonment of casement windows and other medieval features, but also the absence at this time of any marked classical features except the modillion cornice. The papers of James Logan, the first owner, give much information regarding its building.

odicals, would be the most useful tool of the student of our early architecture.

The Accuracy and Authenticity of Existing Records

The various works mentioned, in their texts and descriptive legends, as well as the books discussing in their text the whole range of Colonial architecture, such as Eberlein's "The Architecture of Colonial America," Embury's "Early American Churches," and Chandler's "The Colonial House," differ greatly in the accuracy and authenticity of their individual statements. The "Georgian Period," as the pioneer work of many volunteer contributors, is especially untrustworthy as to names and dates. For instance, Estouteville, a famous Piedmont mansion, figures in its pages as "Astrudeville," and the date of Westover is given on the same page both as 1737 and 1787 — neither date being correct, as John Spencer Bassett has shown in his study of William Byrd of Westover. A still more unfortunate instance, which distorts our whole view of the origins and development of the Dutch Colonial style, is the date of 1655 given by Mr. Embury for the Bergen house on Long Island. It appears from the published account of the Bergen family, on the contrary, that the house occupied by the Stoothoffs, who first purchased the site, in 1665, is but a small part of the existing house, the greater part having been erected in 1819, and one wing even as late as 1824! The example supposed to represent the earliest Dutch buildings is found really to belong a generation and more after the Declaration of Independence! Thus, although in certain works, such as Isham and Brown's two books on Rhode Island and Connecticut houses, a conscientious effort has been made to authenticate the dates by documents, in general, dates for which no satisfactory reference is given must be used only with greatest caution.

The same caution must be exercised in respect to loose statements that bricks or detail were brought from England, or that designs were furnished by English architects such as Sir Christopher Wren. Brickmaking was everywhere common in the Colonies from an early time, and attributions even to lesser lights of English architecture, like James Gibbs, are found to rest at most on copying his plates of published designs. His church of St. Martin-in-the-Fields, named as the prototype of so many Colonial steeples, did indeed have a great influence; but the variety in the Colonial examples themselves should teach a greater discrimination in statements of that sort. Even in the attribution of buildings to famous native designers, such as Bulfinch, Thornton, or McIntire, the temptation to attach a great name to any fine house is as insidious as the old practice of ascribing every notable Italian painting to a master of the rank of Giotto, Raphael, or Veronese.

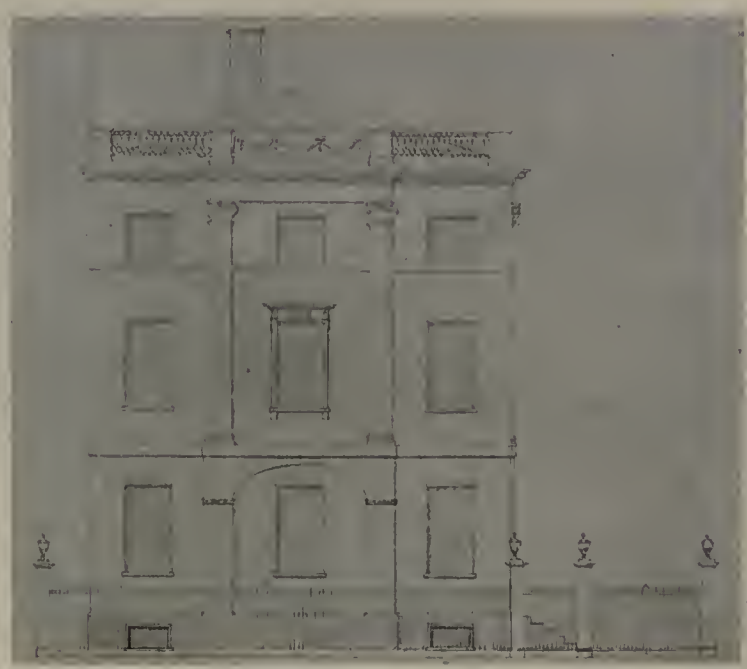
Governor Francis Bernard's Design for Harvard Hall, 1764-65
(From copy in Du Simitière Collection)

A simple example of the academic treatment introduced by amateurs and others in the later eighteenth century. The committee appointed to rebuild the hall, burned 1764, reported, June 18, 1765, "that the committee being sensible of his Excellency's superior knowledge in architecture requested him to favor them with a plan, and having examined and approved the same, we have ever since been carrying it into execution."

Confusion and Disagreement of Nomenclature

The difficulties of securing intelligent agreement in the subject are greatly increased by the prevailing confusion in the application of such terms as "Colonial" and "Georgian," and in the division of the development of the style into periods greatly varying in extent and designation. The first men to appreciate our early buildings, such as Richard Upjohn, writing in 1869, applied the term "Colonial" architecture logically enough to all works erected before the Revolution. The first uses of the word "Georgian" were also accurate and intelligible, as applying to work erected in the reigns of the Georges. Thus Robert S. Peabody, in 1877, spoke of "the Georgian houses of New England," the finest models in his view being from the reigns of George I and George II, rather than those of William and Mary or of Queen Anne. With the extension of artistic approval to the similar buildings erected after the Revolution came the inclusion of all four reigns of the Georges, from 1714 to 1827, as in "The Georgian Period," published in 1899. Thus the term "Georgian," which ignores the independent development in America, came to be applied to our architecture even after the Revolution, when it would better have been limited exclusively to England. And as sequel the term "Colonial" came to cover the approved period, irrespective of the change from Colonies to Nation, often excluding work in the Colonies during the seventeenth century.

Meanwhile, a new and quite different limitation was proposed for the "Colonial" in connection with the first attempt to subdivide this long development into subordinate periods, made by Corner and Soderholz in 1891. After stating that "professionally the term Colonial architecture is generally understood to include all the architectural efforts of the original Colonial districts prior to the period of the Greek affection," they distinguish three periods: the "Colonial *Period*" (proper), to 1700; the "Provincial Period," 1700 to 1776; and the "Federal Period," after 1776. Although never given entire approval, this system has tended to introduce a usage in which "Colonial" applies up to 1700 and "Georgian" after 1700 — as in Donald Millar's title, "Some Colonial and Georgian Houses."



Study for the Derby-Rogers House, Salem, About 1800
(From Essex Institute Collection)

Characteristic of the post-Colonial work of the early national period, which retains the academic motives of Colonial architecture, often, as here, with a new delicacy due to Adam influence. The paper on which the drawing is made is water-marked with the date of manufacture, 1795, always antedating the use of the paper by some years. The owner's inheritance of a fortune in 1799 further helps to fix the date of the building.

Thus it comes about that at the present day we have the term "Colonial" architecture used in three different misleading senses, two of them even mutually exclusive: (1) For all the work from 1620 to 1820, as in Chandler's "The Colonial House;" (2) for the work from 1700 to 1820 only, as in Wise and Beidelmann, etc.; (3) for the work from 1620 to 1700 only, as in Millar, etc.

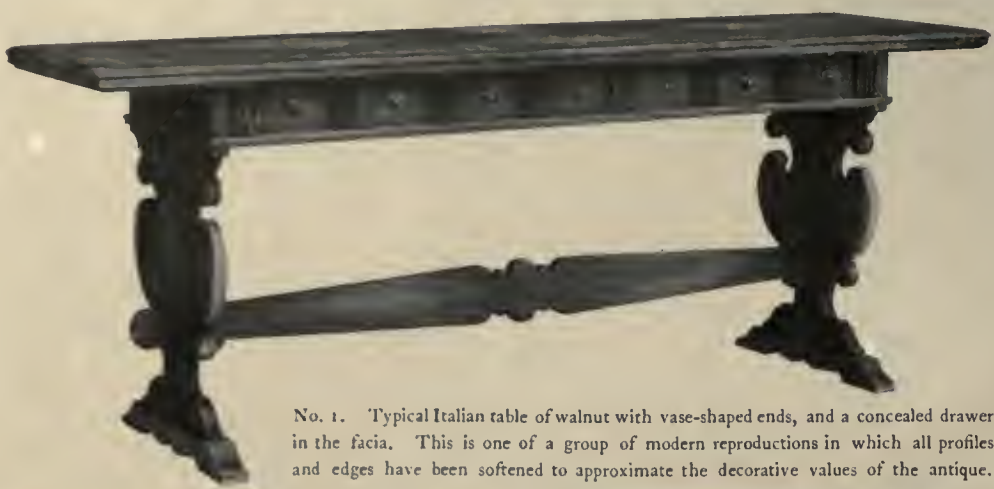
(To be continued)

MODERN FURNITURE IN HISTORIC STYLES

PART II. RECENT PIECES OF FURNITURE INSPIRED BY ITALIAN PRECEDENT

This new department, illustrating types of Period Furniture, has been inaugurated as a feature of practical value to the architect, to appear regularly in THE ARCHITECTURAL REVIEW. *It is the intention by this means to illustrate occasional pieces of furniture of architectural value, and to keep the profession informed of furniture recently manufactured that conforms with acceptable standards of definite architectural styles. As only a selection from the best of the furniture currently manufactured by American cabinet-makers will be pictured in these pages, our readers are invited to submit written inquiries when desiring further information about any individual piece, or pieces, in which they may be interested. They may in this way obtain the names of the manufacturers, and be informed of the sizes, prices, and places where the piece illustrated can be obtained.*

Address all inquiries to Modern Furniture Editor, THE ARCHITECTURAL REVIEW, 144 *Congress Street, Boston, Mass.*



No. 1. Typical Italian table of walnut with vase-shaped ends, and a concealed drawer in the facia. This is one of a group of modern reproductions in which all profiles and edges have been softened to approximate the decorative values of the antique.

No. 2. A small stand patterned after the form of Italian tables, and showing characteristic mouldings and doweled stretcher.

No. 3. A small Italian table of which the end supports show the baroque tendencies of the late Renaissance.

No. 4. An Italian wall cabinet, designed in modern adaptation, to serve as the sideboard in a fine Italian dining-room set. This adaptation is a striking instance of the architectural affinity of Italian furniture.

No. 5. An accurate reproduction of a massive Italian table in walnut. The original from which this copy was made formed a part of the Volpi collection from the Davanzati Palace.

No. 6 to No. 14. The recent and present popolarity of Italian furniture has resulted in the adaptation of many Italian forms for the design of modern furniture.

The element of dignity in Italian furniture has made it particularly suitable as a motif for dining-room furniture, and representative pieces from two sets of these modern adaptations are shown on this page.

The chairs are particularly deserving of study, their design combining to a remarkable degree present-day utility with historic tradition.

The buffet at the top of the page is excellently dignified, and the console serving-table shows an ingenious use of the Italian scroll, characteristically seen in table ends.

The sideboard with burl walnut panels illustrates the possibilities for simple dignity and substantial construction afforded by Italian furniture forms.

With the revival of Italian furniture has come a revival of popularity for walnut as a cabinet wood. Furthermore, the naturally beautiful grain and texture of walnut have been greatly enhanced by rich, dull antique finishes, in which no varnish or shellac is used.

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FEBRUARY, 1918

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THE dramatic and completely effective manner in which the Government itself has featured the change from our old *laissez-faire* policy of "Business as Usual" to furthering only that "Business" necessary "to Win the War," announced in the drastic Garfieldian holidays just past, has gone farther to convince most American manufacturing communities of the truth of Sherman's definition of war than anything else that could have occurred "east of the Mississippi!" That they were adopted as a final and desperate measure to break the transportation blockade and get coal to the empty bunkers of the ships waiting at our overcrowded docks, thus releasing on their journeys some four or five score of transatlantic carriers, — now known as one of the principal urgent reasons behind this revolutionary piece of imperialistic dictatorship in Governmental assumption of control over American industries, — has reconciled us but little to the use of such a costly expedient. Taken along with the shortage in fuel, both oil and coal, which not only affected shipping and railroading, but was also the means of bringing disturbed world conditions vividly home to many individual families this spring, most Americans are now finally convinced of the reality of our entrance into the war!

Other, and sadder, evidence has already begun to trickle back across the Atlantic — and this is only the beginning; much more is still to come! For one thing, the coal shortage will continue; and will be felt in many localities next fall and winter that *this* winter escaped the real pinch of necessity. This shortage has served, perhaps, as a warning. It should direct attention to the wastefulness with which we have gone on, year after year, squandering our limited supply of fuel, up to the very point where just the additional amount called for by the new pressure of war shipping and transportation has caused the nation to overstep its margin of safety as few in this country would have believed possible. Still other results are going to follow, and by another year, if the shortage, as now seems probable, continues that length of time, certain remedies will be demanded. Some few remedies are already easily available. Certain other remedies have yet to be supplied and placed practically within the reach of individuals. The shortage this year was an indication that their completion cannot be hastened too fast!

IN the latter class particularly occur a number of electrical inventions for local heating, the more valuable as electricity can be used more economically — so far as coal consumption is concerned — than gas; for gas requires coal for its manufacture, in great quantities. Once manufactured, — through poor tips in private houses, and wasteful burning and lack of mechanical control in street lighting, where lamps often burn double the time actually necessary for night illumination, — it is wasted in consumption to an almost unbelievable degree.

Electricity, however, requires no such waste of natural fuel. As is well known, it can be produced by the most universal and least wasteful of all means, — the mere natural tendency of water to run down hill! There hardly exists an inhabited section of this country that cannot easily be supplied with light and power, at least, sufficient to take care of its entire needs, by making proper use of adjacent water-power, or investing in the plant necessary to conserve and transmit this power from the necessary sources to the centers of consumption; while the cost of manufacture, once the plant has been put in complete operation, will reduce existing production expense from 50 to 200 per cent, at the same time that it will relieve the coal and oil-producing sections of the country of many demands they are now striving impotently to meet. The mere release in coal-cars alone can hardly be estimated or realized by any individual who has not had the experience of traveling over the mountains by the "B. & O." or "Pennsylvania" lines, and passing solid trains of coal cars, on sidings or in motion, for unending mile after mile!

ELECTRIFICATION of the railroads will undoubtedly be forwarded urgently, in spite of the increased initial costs of installation, — the single bugbear that has so long prevented its development. Experience on the "New Haven," and on the Western Mountain Division of the "Chicago, Milwaukee, and St. Paul" roads, shows not only resulting economy in the conduct of the road itself, but the tremendous betterment of living-conditions by eliminating coal-dust, soot, and smoke along the line through these sections where the road passes, thus increasing real-estate values and turning acres of "No-Man's Land" into available business and residential districts.

Against the argument that there exist sections where water-power is unavailable, either in quantity and amount or because of remoteness of natural location, it can be said that, if coal *is* to be required as the *only available* source of power or light, it can still be used more cheaply and efficiently *at the mouth of the mine* than at *any* distance away, near or remote. In other words, it is simpler and cheaper to run the cars out of the mine directly to the dump, there to feed directly into the furnaces of a huge plant located beside the mine trestle and generate the power to be transmitted by high-pressure cables to its place of consumption, than follow the present inefficient and wasteful method of hauling the coal for huge distances — by the further waste of the additional coal needed for engine power — and then to add the further cost of its final transportation by team to the individual furnace or fire-pot for which it is destined!

Where conditions allow, it is feasible to obtain through co-operation less expensive heating-systems than generally exist in residential house groups, particularly when arranged around the city block. A great part of the expense of individual heating-plants might be saved by using a central heating-plant, run co-operatively, that would economize for all. This method of providing power and light has been financially profitable in many down-town city blocks. A similar scheme in residential sections suggests undoubted advantages of economy in administration, as well as practical savings in dirt, help, responsibility, and care!

THE architect should here find his special and allotted place in educating the public to efficient methods of coal consumption. He knows how it is best possible to heat to advantage by the methods now commonly in use, and where one system would require less fuel consumption than another. Many architects know that, given the right type of plan, a small hot-air furnace is healthier and more economical in heating the small house than hot water or steam, the latter being, under some conditions, wasteful of fuel in dwelling practice. Granting that, for economical efficiency, either water or steam is required, however, by a slight additional cost in the installation, a more efficient and economical plant often can be obtained by the various mechanical devices which have indisputably proven their economical possibilities. Under such conditions of fuel shortage as now exist, — and as may continue for some time to come, — every architect should give his client the benefit of the most expert knowledge in the problem of economic fuel consumption and control. That this aspect has generally been disregarded illustrates rather our national thoughtlessness than our far-sightedness and common sense. The practice of installing the most expensive heating-plant obtainable, regardless of the cost of keeping that plant in operation, we can well hope has passed away forever!

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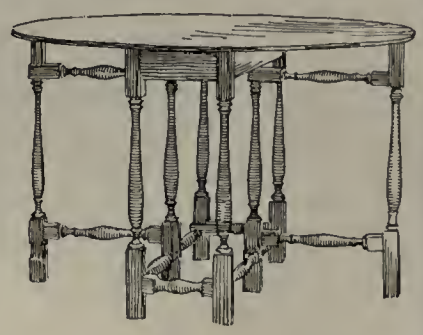

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The Architectural Review

Volume VI (Old Series, Vol. XXIII) March, 1918 Number 3

Some Observations on the Grouping of Farm Buildings

With Especial Relation to the Six Groups Illustrated

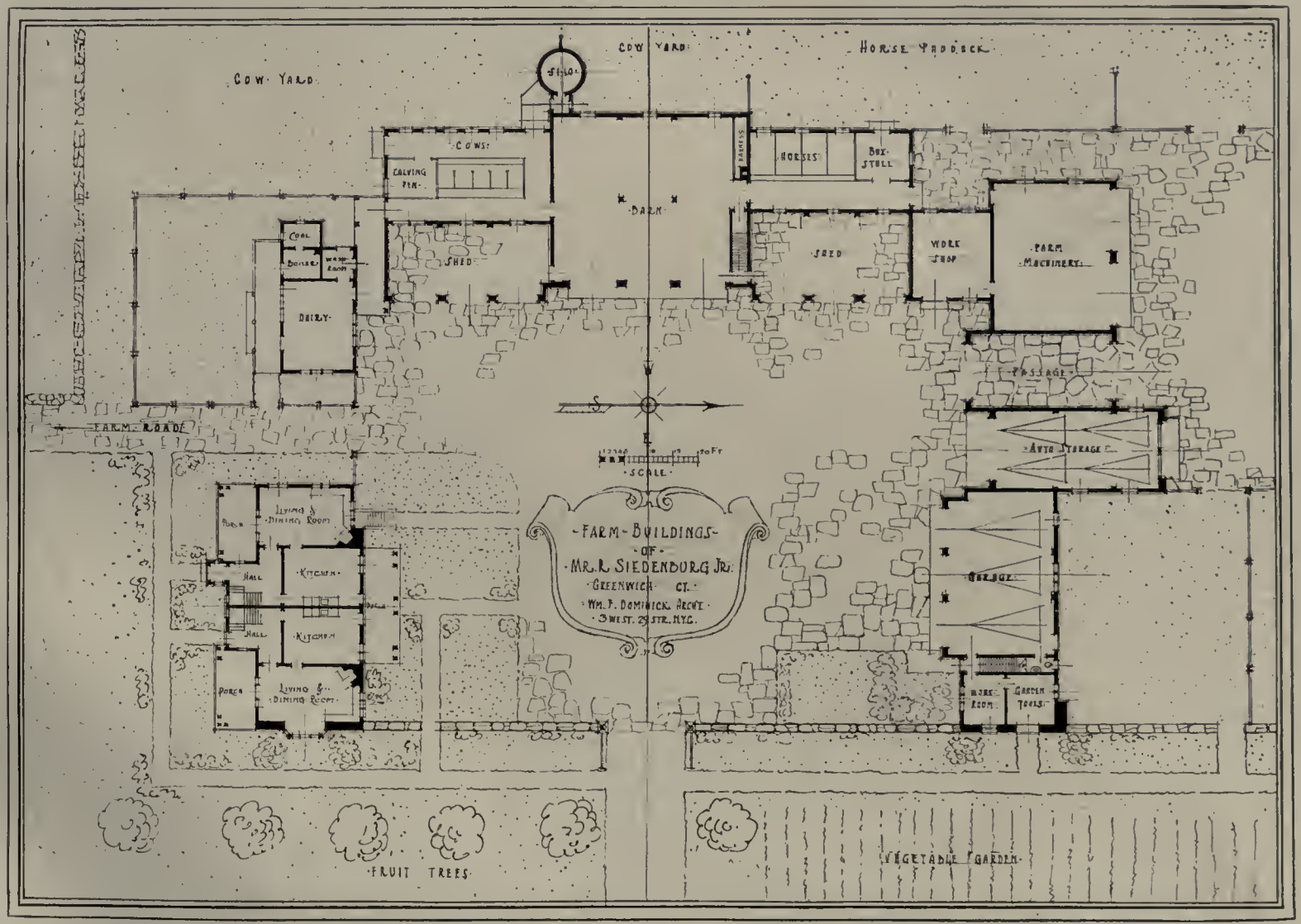
By Edwin C. Cramer

THE grouping of farm buildings seems an obvious and logical method of attaining convenience in interrelation and use; the problem, of course, varying greatly in detail, according to the purposes for which the individual buildings are to be utilized, or the whole group employed, by the owner.

The purpose of the farm group is to relate, in their natural sequence of use, the various departments necessary to the best and most economical manufacture of the products of the agriculturist. Just as in any other business, this grouping and arrangement should aid in the economic administration of the business, and so help obtain the better, more efficient, and more sanitary conditions now generally being demanded for all farm produce.

View of Model from Northwest. New Group of Cow-Barns, etc., on Estate of Frederick Pabst, Esq., Lake Oconomowoc, Wis.
Fernekes & Cramer, Architects

In the case of Major Fahnestock's buildings at Putnam Valley, Mr. Albro, the architect, has produced an interesting and conve-



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Plan of Group of Farm Buildings for Mr. R. Siedenburg, Jr., Greenwich, Conn.
William F. Dominick, Architect

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niently arranged group, adapted to a comparatively modest farm, conducted by the owner to obtain sufficient farm produce for his own use, or that of a more or less small and select circle of customers or friends. That the buildings are of durable materials is an asset of eventual economy to the owner; that they have been made architecturally picturesque is an added element of value, benefiting both the owner and the surrounding situation — besides being an attribute that need not interfere with their practical arrangement and usefulness nor economical and durable construction!

Another View of Model, from North. New Group of Cow-Barns, etc., Estate of Frederick Pabst, Esq., Lake Oconomowoc, Wis.
Fernekes & Cramer, Architects

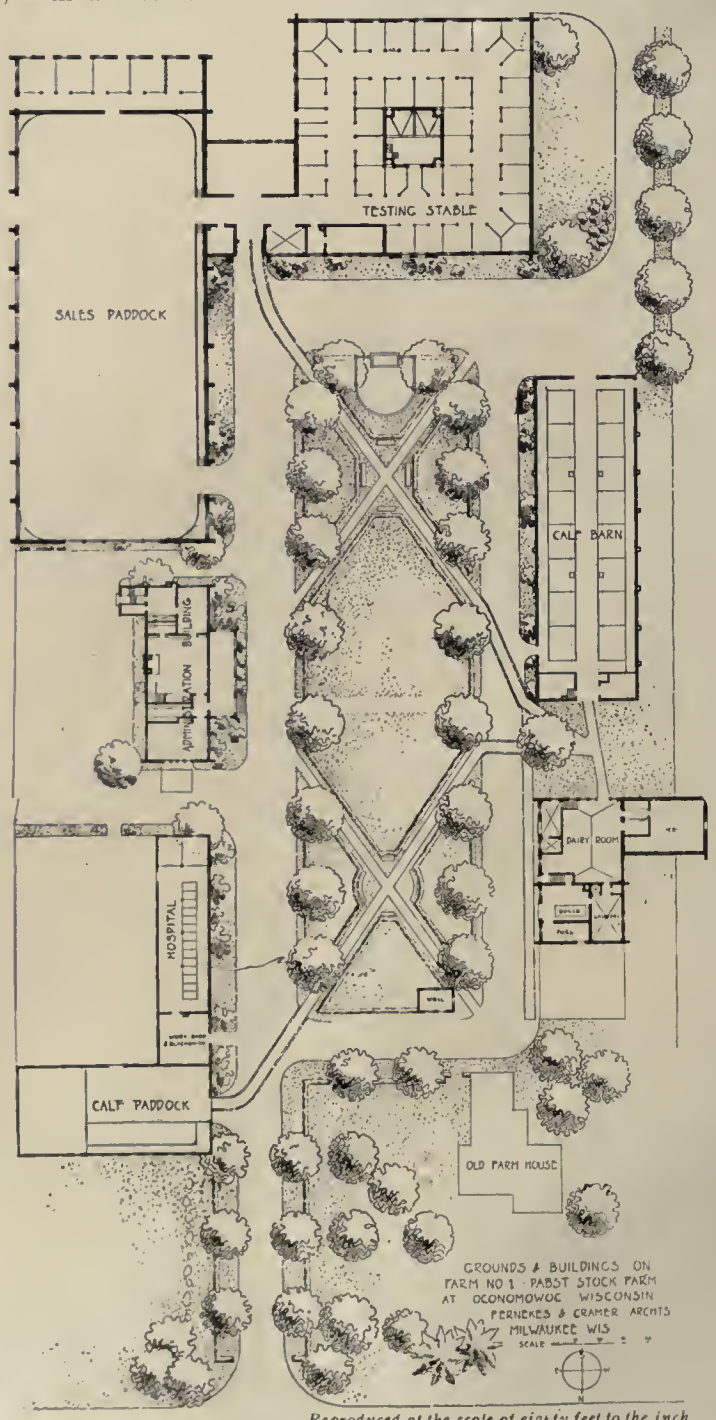
In this instance the dairy is removed to a greater distance than might perhaps always seem necessary or desirable, and the main farm group is increased, by an unconnected helps' cottage at the west, and a separate manure-pit and piggery at the east; with an ice-house in the valley, located about half way between the piggery and the reservoir, on the hill to the south. The final element is a windmill, which has also received its definite and characteristic architectural touch.

On the estate of Mr. Frederick Pabst, located on the shores of Lake Oconomowoc, thirty miles west of Milwaukee, Wis., and comprising about 1,200 acres of farming land, the problem was considerably more complicated. First intended by the owner as a stock farm for raising horses, the principal buildings were originally so constructed — beginning in 1906 — by the architects, Fernekes & Cramer, of Milwaukee. They were then divided into seven groups, totaling about thirty buildings, built almost altogether of concrete. The four principal groups had two farms allotted to the horse department, and two others served for pasturage center and breeding purposes. Space was reserved in the first group for the owner's residence; a private stable, with houses for the help; gardener's cottage, automobile garage, etc.

The second group included a residence for the general manager, a club-house for hostlers and horsemen, a hackney stable, a stallion stable, a riding-school, a general stable, and wagon-shed. The main farm group included a horse-barn, cow-stable, wagon-shed, hog-pen, hen-houses, brooder houses, dairy building, ice-house, and a residence for the farm manager. The breeding department combined six shelter sheds, a brood mare stable, and houses for the help employed in this department.

With the idea of changing over his farm to produce dairy products, Mr. Pabst has recently had various changes and alterations made by his architects. The farm department remains as before, extra provision being made for livestock, farm machinery, and hay and crop storage. The buildings of the second group (called Farm No. 1, and about a half-mile south of the private stable) have been altered to the new purposes. The club-house is now used for offices and administration building, besides retaining club living and dining room, and quarters for the single men; the old training paddock readapted as a sales paddock; and the old hackney horse-stable — containing thirty-six box stalls around a feed-room — is now a testing-stable, the second story giving space for hay and feed.

The testing-stable required merely some rearrangement of partitions. The new sales paddock is being made by dividing the old riding-school, using half its area for stalls for cattle on exhibition or sale — the remainder being turned into a sales theater, with seats extending from floor to roof.



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Plan of New Group of Cow-Barns, etc., Estate of Frederick Pabst, Esq.
Fernekes & Cramer, Architects

The other buildings are mostly new, and their arrangement, size, and uses are all shown on the accompanying plan. The buildings originally were entirely of concrete, selected as most suitable for the purpose; and they were designed to express frankly the material and method of employment, both externally and internally, the color being natural with a rough texture surface, worked with a brush. Besides its absolute protection from fire, — practically eliminating insurance, — the construction has proved very durable, no cracks or other evidences of shrinkage having developed since its original construction.

The hospital building, including calf paddock and blacksmith shop, is an old structure. Newly added buildings are the calf barn and dairy house. They are of hollow tile, with reinforced concrete floors, and roofs covered with red asbestos cement shingles. They complete a courtyard of about 150 by 300 feet long. The dairy house, which also contains the boiler for heating the entire group, is used for the manufacture of butter and cheese and the testing of milk.

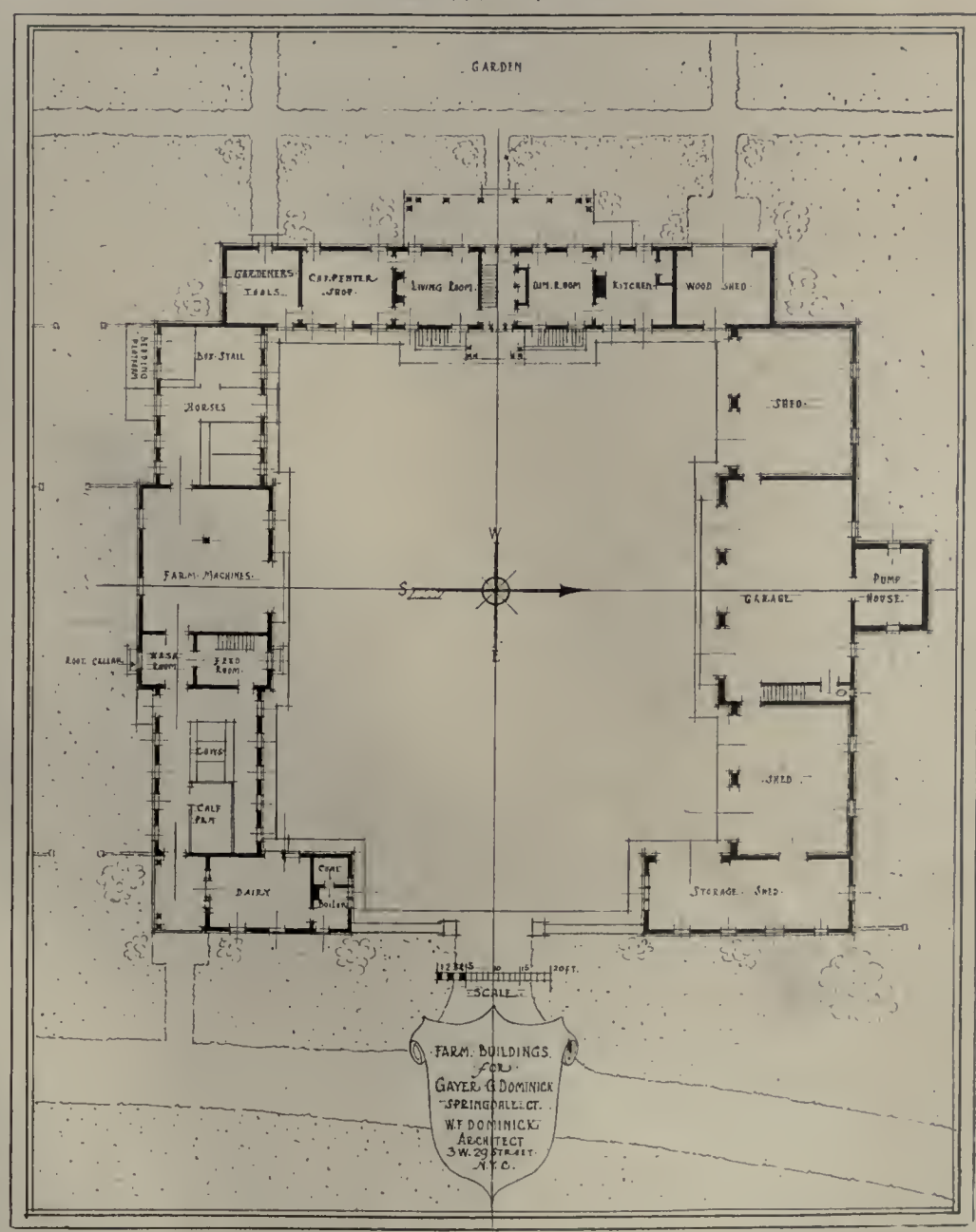
The buildings at Greenwich, Conn., by Wm. F. Dominick, are of stone, half-timber, and stucco design, with variegated green slate roofs; so arranged as to form three sides of a farmyard, enclosed on the side of approach by a connecting stone wall and gates. At the south end is a two-family cottage for farmer and gardener, its second story overhanging the wall; and the garage similarly overhangs the wall at the north of the yard. The main barn is at the back of the group, flanked by cow and horse

Perspective Study for Group of Farm Buildings for Gayer G. Dominick, Esq., Springdale, Conn.
William F. Dominick, Architect

stables to the west, behind farm wagon-sheds, which open from the yard.

Mr. Dominick is also architect of the group at Springdale, Conn., also a picturesque yet practical arrangement, around a court, of connected structures in the Colonial style, with wide shingles and green blinds. They are intended for those who keep a few cows for themselves and try to work their farms so as to be self-sustaining. The main farm barn has hay storage above, with a wing for horses and another for cows, running east and west, giving the animals a southern exposure, with winter yards located to the south. They are further protected by a three-car garage,—balancing the barns in mass,—with two wings of farm sheds on the north side of the yard.

Between these two main buildings is the farmer's cottage, with farm workrooms closing in the yard end; while in front, the dairy, the cow-barn, and a shed, as on the opposite side, are connected by a wall with central gate-



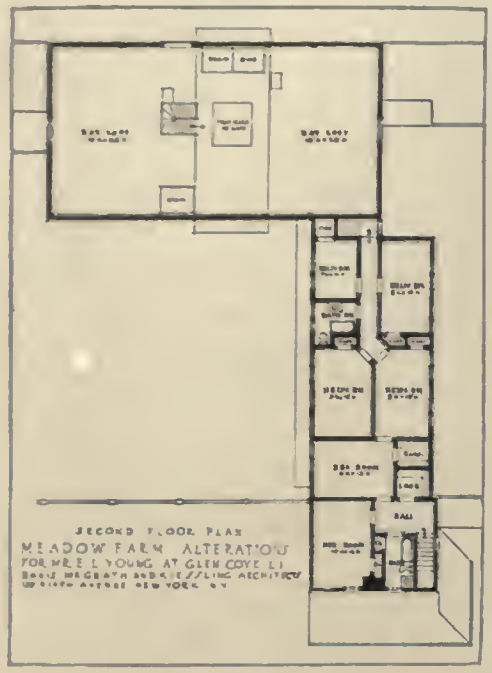
Reproduced at the scale of thirty-two feet to the inch

Plan of Farm Building Group for Gayer G. Dominick, Esq., Springdale, Conn.
William F. Dominick, Architect

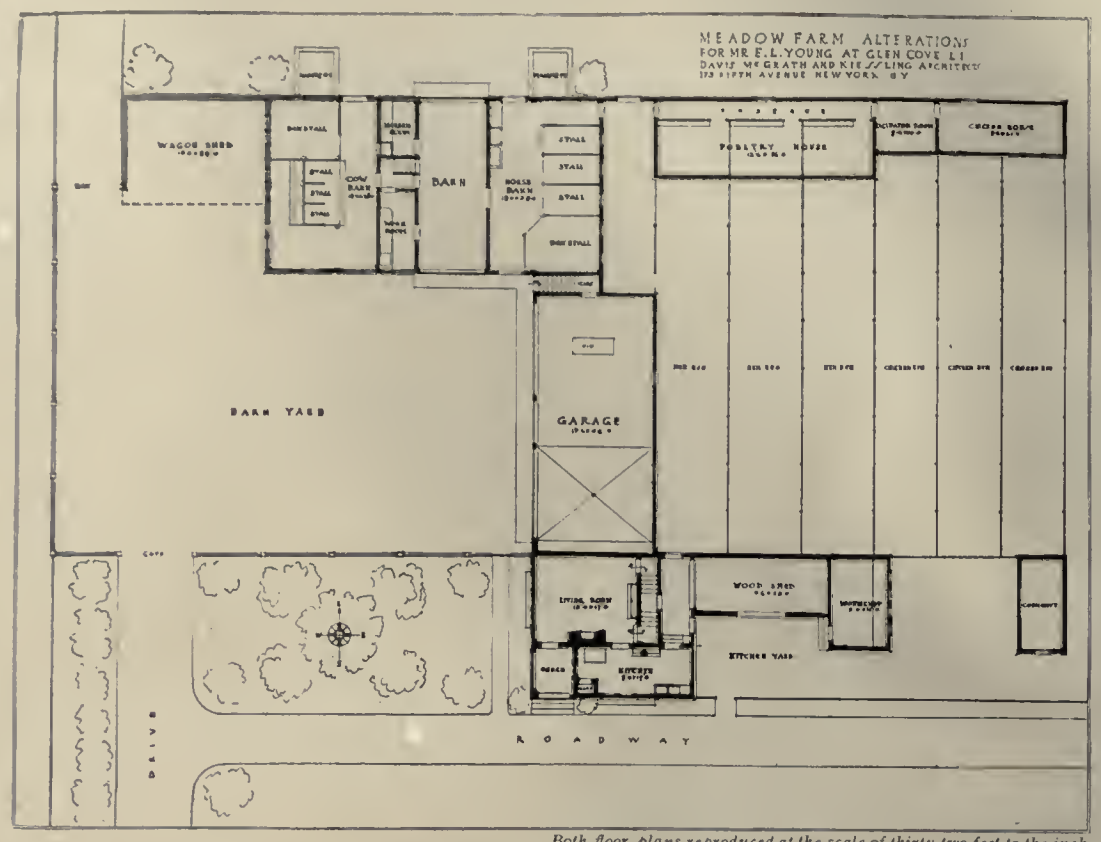
way. Behind the garage, and opening into it, where it can easily be watched by the chauffeur, is the electric water-supply pump, located in a pump-house over an artesian well, with an underground pressure tank.

The problem of obtaining a consistent group at "Meadow Farms," the estate of Mr. E. L. Young, Esq., Glen Cove, L. I., by Davis, McGrath & Kiessling, architects, was an even more interesting puzzle than the alterations to the dwelling (illustrated in January). As appears in the two plans showing the estate "before and after," it was largely a puzzle in reassembling the many varied old units — which may be identified by the letters, on both plans. The unusually successful result gave the group that final aspect of harmonious inter-relation both in itself and to the residence, as appears by a study of the plates and detailed plans printed on the next page. In this case the buildings were to meet the miscellaneous every-day needs required to

make urban life comfortable for the owner's family, by providing a sufficiency of conveniences, garden produce and fruit, without attempting the larger requirements of a real farm.



Second Floor Plan

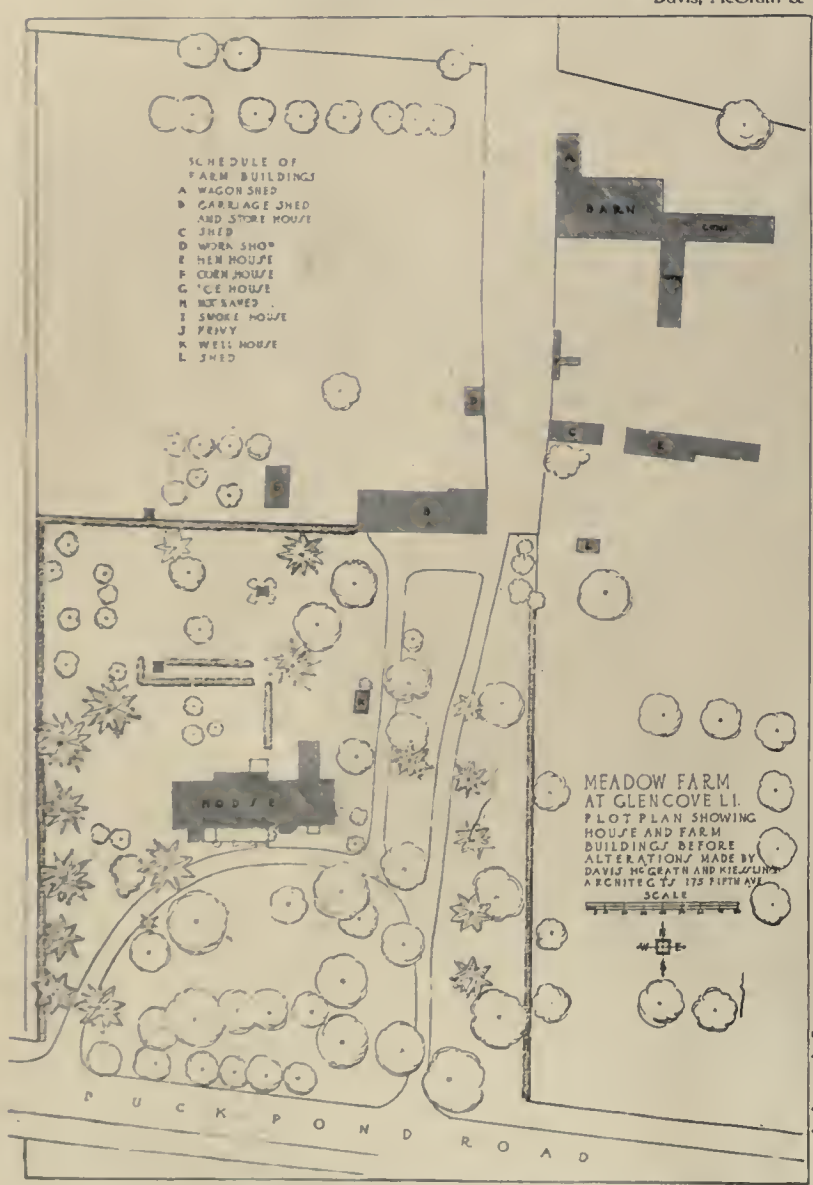


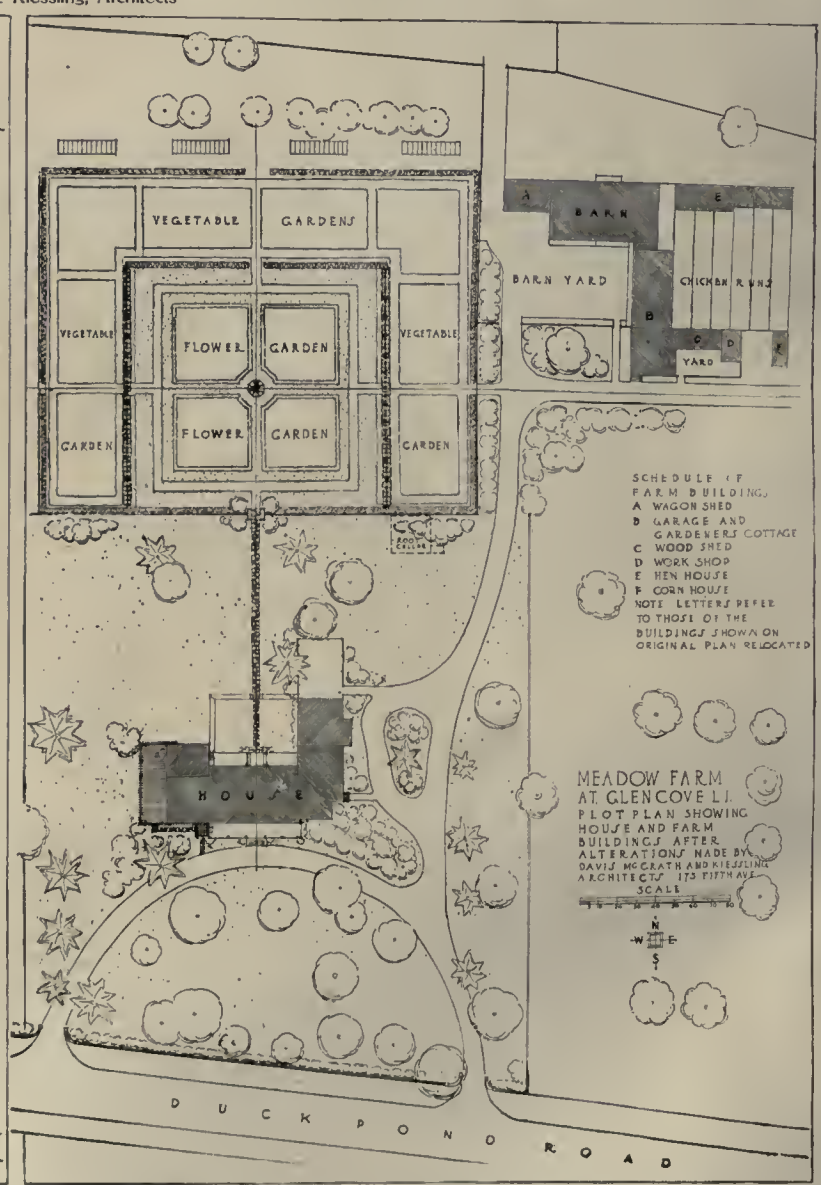
Both floor plans reproduced at the scale of thirty-two feet to the inch

Plan of First Floor and Immediate Grounds

Alterations and Additions to Stable Buildings for Mr. E. L. Young, at "Meadow Farm," Glen Cove, L. I.

Davis, McGrath & Kiessling, Architects





Both plot plans reproduced at the scale of one hundred feet to the inch

Plot Plan, Showing Estate, House, and Farm Buildings Before Alterations

Plot Plan, Showing Estate, House, and Farm Buildings After Alterations

Changes Made to "Meadow Farm," Estate and Buildings, belonging to Mr. E. L. Young, at Glen Cove, L. I.

Davis, McGrath & Kiessling, Architects

VIEW ALONG FRONT OF MAIN GROUP

FARM BUILDINGS ON ESTATE OF MAJOR CLARENCE FAHNESTOCK, COLD-SPRING-ON-THE-HUDSON, NEW YORK

LEWIS COLT ALBRO, ARCHITECT

GENERAL VIEW

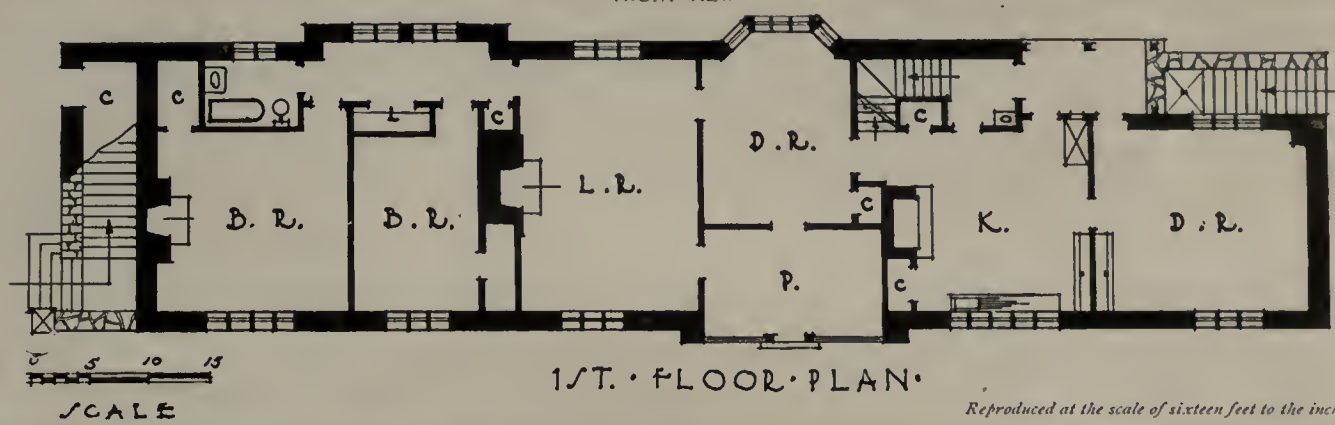
MAIN GROUP WITH DAIRY AT LEFT

VIEW OF MAIN WAGON BARN FROM PADDOCK BEHIND HORSE STABLE

FARM BUILDINGS ON ESTATE OF MAJOR CLARENCE FAHNESTOCK, COLD-SPRING-ON-THE-HUDSON, NEW YORK

LEWIS COLT ALBRO, ARCHITECT

FRONT VIEW



Reproduced at the scale of sixteen feet to the inch

REAR VIEW

SUPERINTENDENT'S COTTAGE ON ESTATE OF MAJOR CLARENCE FAHNESTOCK, COLD-SPRING-ON-THE-HUDSON, NEW YORK

LEWIS COLT ALBRO, ARCHITECT

VIEW OF WHOLE GROUP FROM THE SOUTHEAST

VIEW OF GROUP TAKEN ON THE AXIS FROM THE EAST

EXTERIOR OF FARMER'S COTTAGE

FARM BUILDINGS GROUP FOR GEORGE P. GREENHALGH, TOLEDO, OHIO

ALFRED HOPKINS, ARCHITECT

CORNER OF HALL

HALL AND STAIRCASE

INTERIOR FARM COTTAGE. FARM BUILDINGS GROUP FOR GEORGE P. GREENHALGH, TOLEDO, OHIO

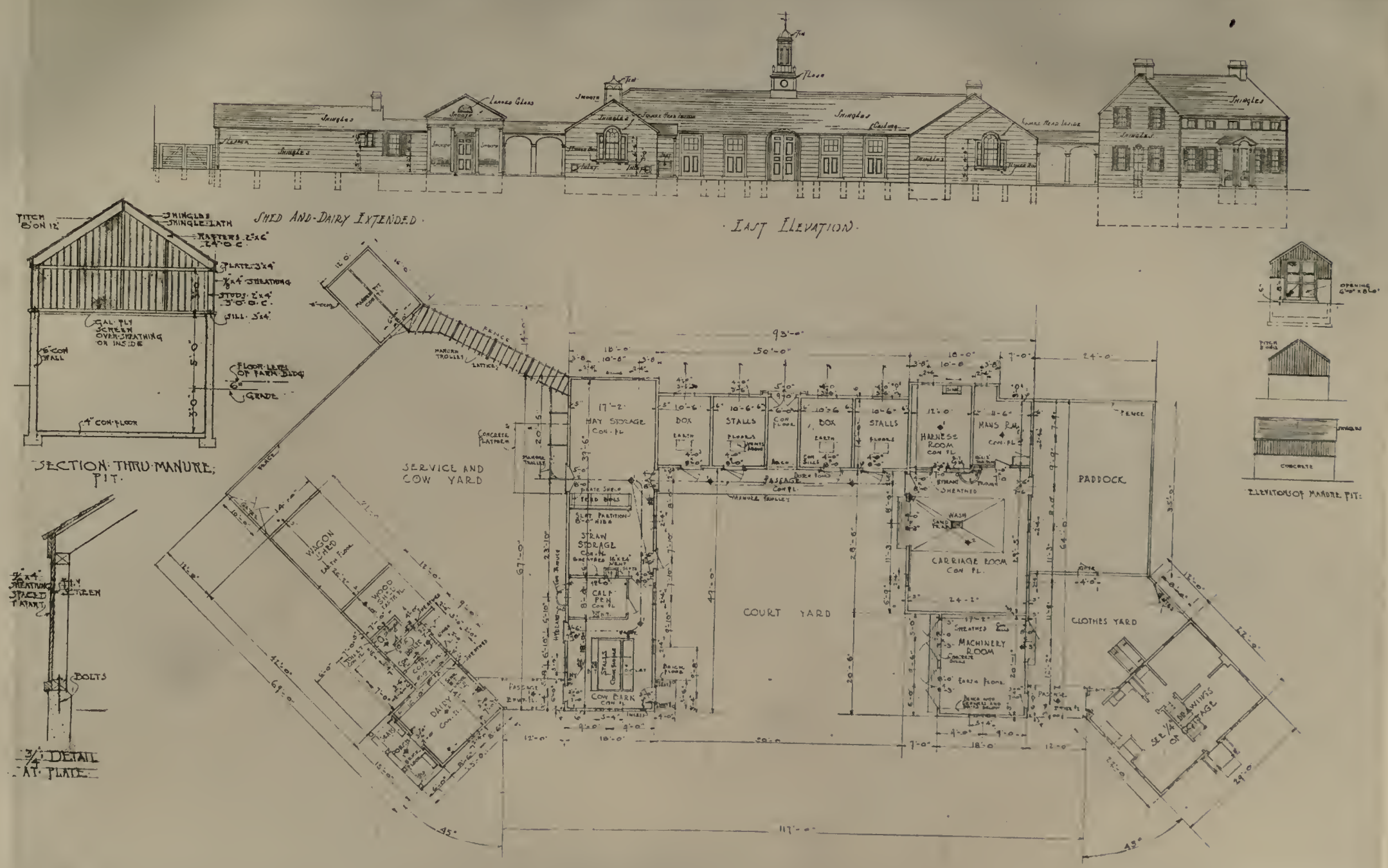
ALFRED HOPKINS, ARCHITECT

DINING ROOM

KITCHEN

INTERIOR OF FARM COTTAGE. FARM BUILDINGS GROUP FOR GEORGE P. GREENHALGH, TOLEDO, OHIO

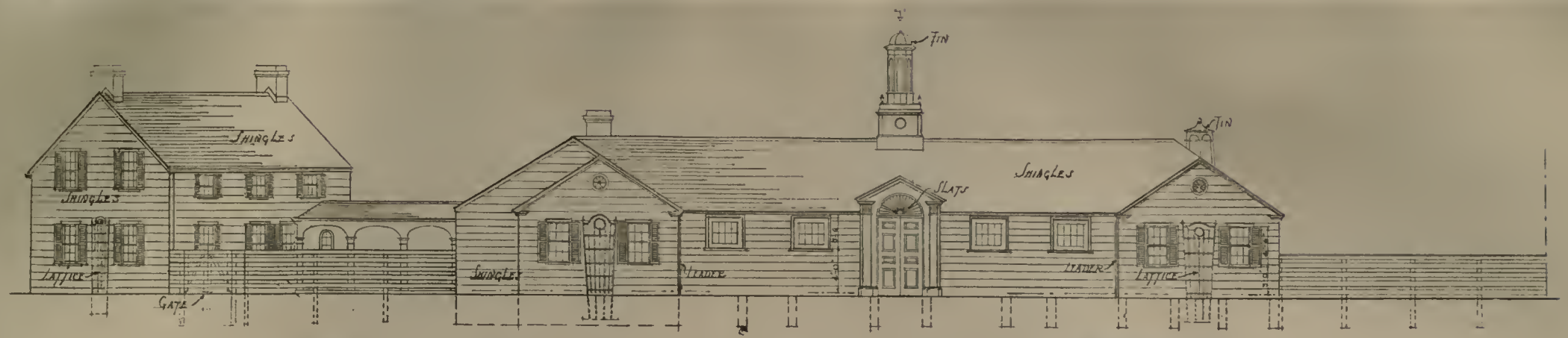
ALFRED HOPKINS, ARCHITECT



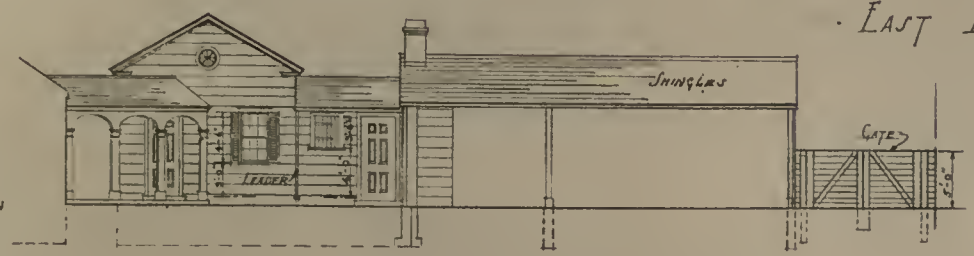
PLAN AND PRINCIPAL (EAST) ELEVATION

FARM GROUP, ESTATE OF GEORGE P. GREENHALGH, ESQ., TOLEDO, OHIO

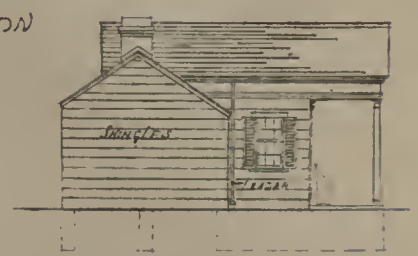
ALFRED HOPKINS, ARCHITECT



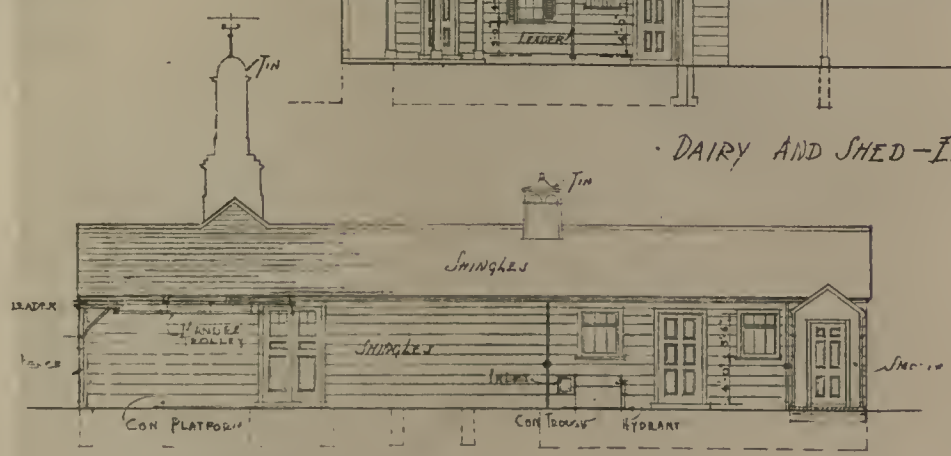
· EAST ELEVATION



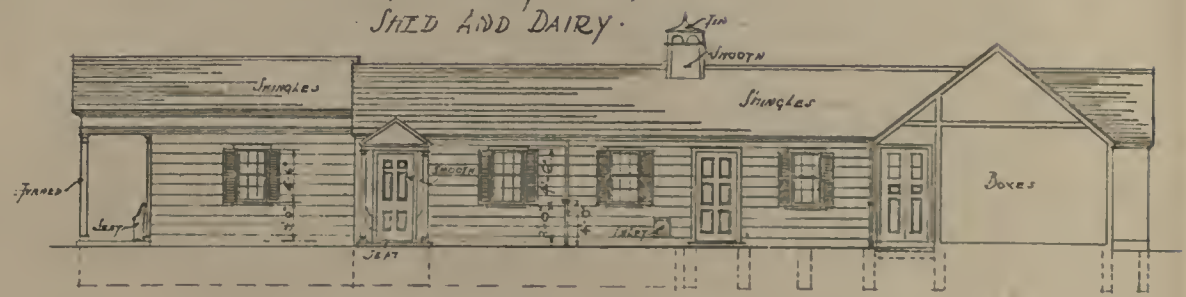
· DAIRY AND SHED—EXTENDED ·



· SOUTH ELEVATION OF SHED AND DAIRY ·

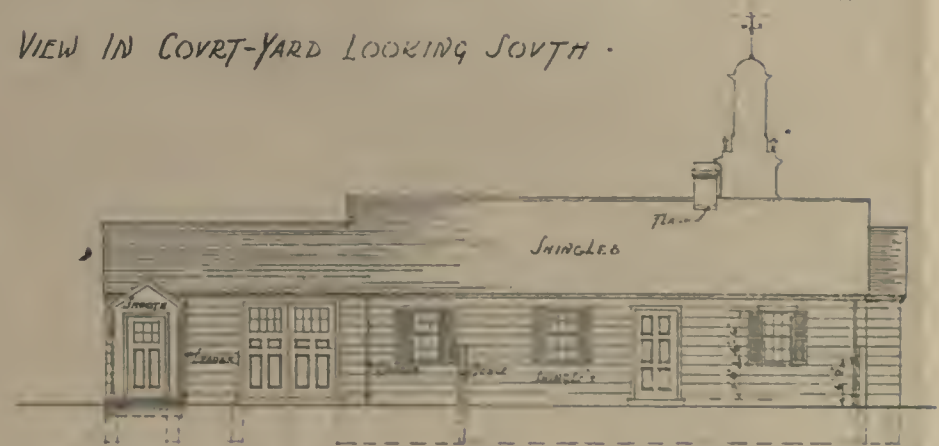


· ELEVATION—NORTH SIDE OF COW YARD ·



· VIEW IN COURT-YARD LOOKING SOUTH ·

· VIEW IN COURT-YARD LOOKING NORTH ·



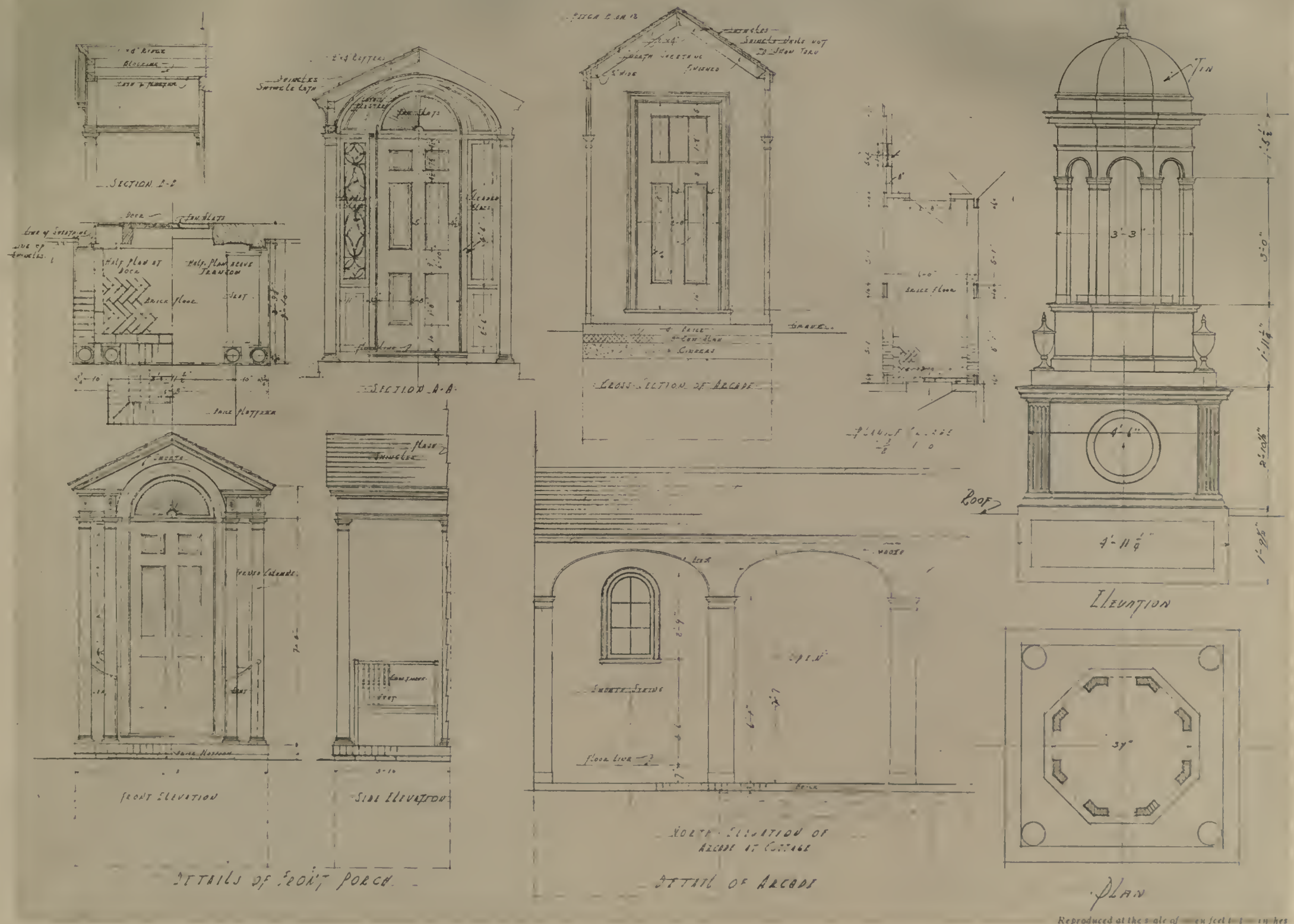
· NORTH ELEVATION

Reproduced at the scale of sixteen feet to the inch

OTHER PRINCIPAL ELEVATIONS

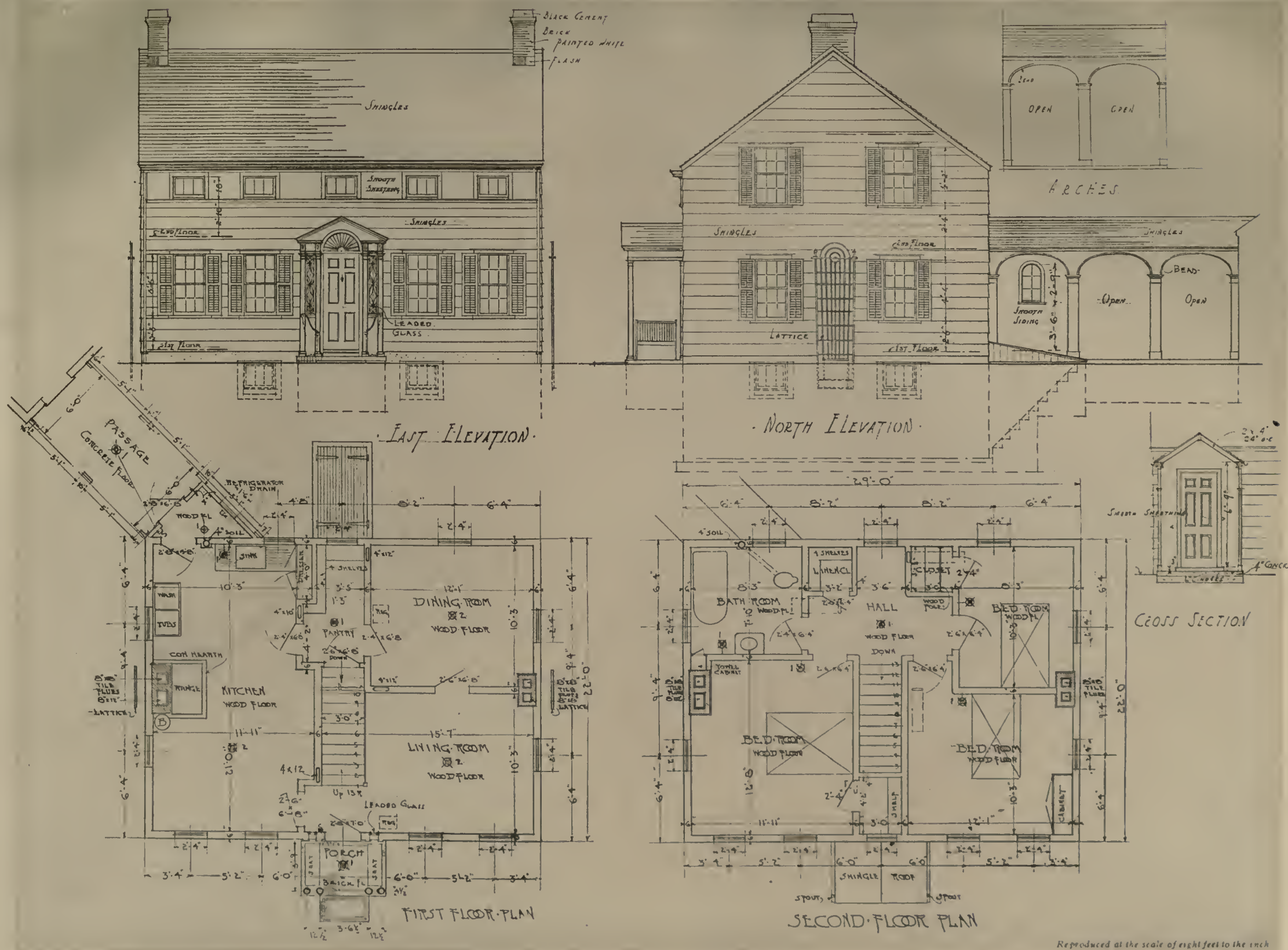
FARM GROUP, ESTATE OF GEORGE P. GREENHALGH, ESQ., TOLEDO, OHIO

ALFRED HOPKINS, ARCHITECT



VARIOUS DETAILS

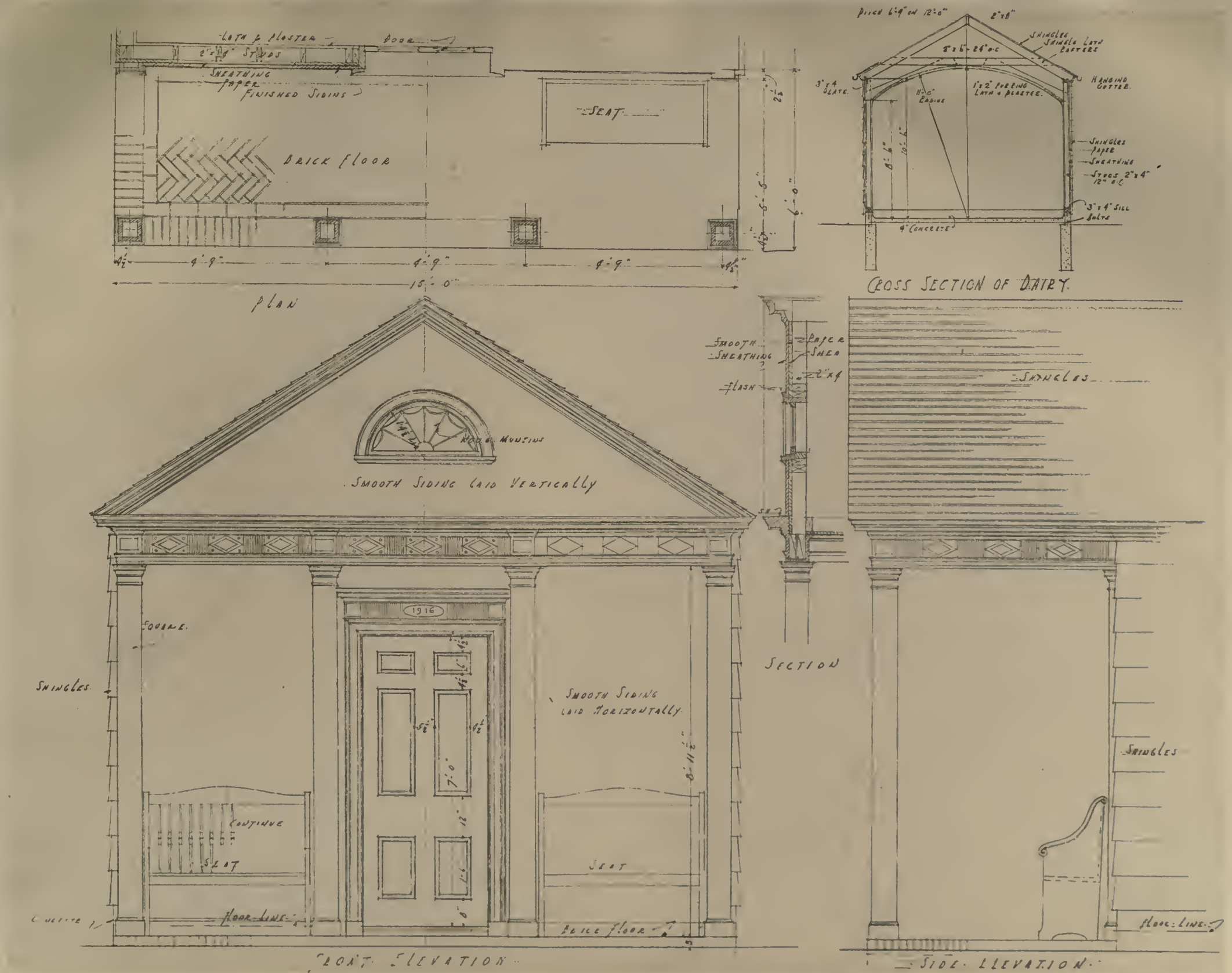
FARM GROUP, ESTATE OF GEORGE P. GREENHALGH, ESQ., TOLEDO, OHIO



PLANS AND ELEVATIONS

COTTAGE IN FARM GROUP, ESTATE OF GEORGE P. GREENHALGH, ESQ., TOLEDO, OHIO

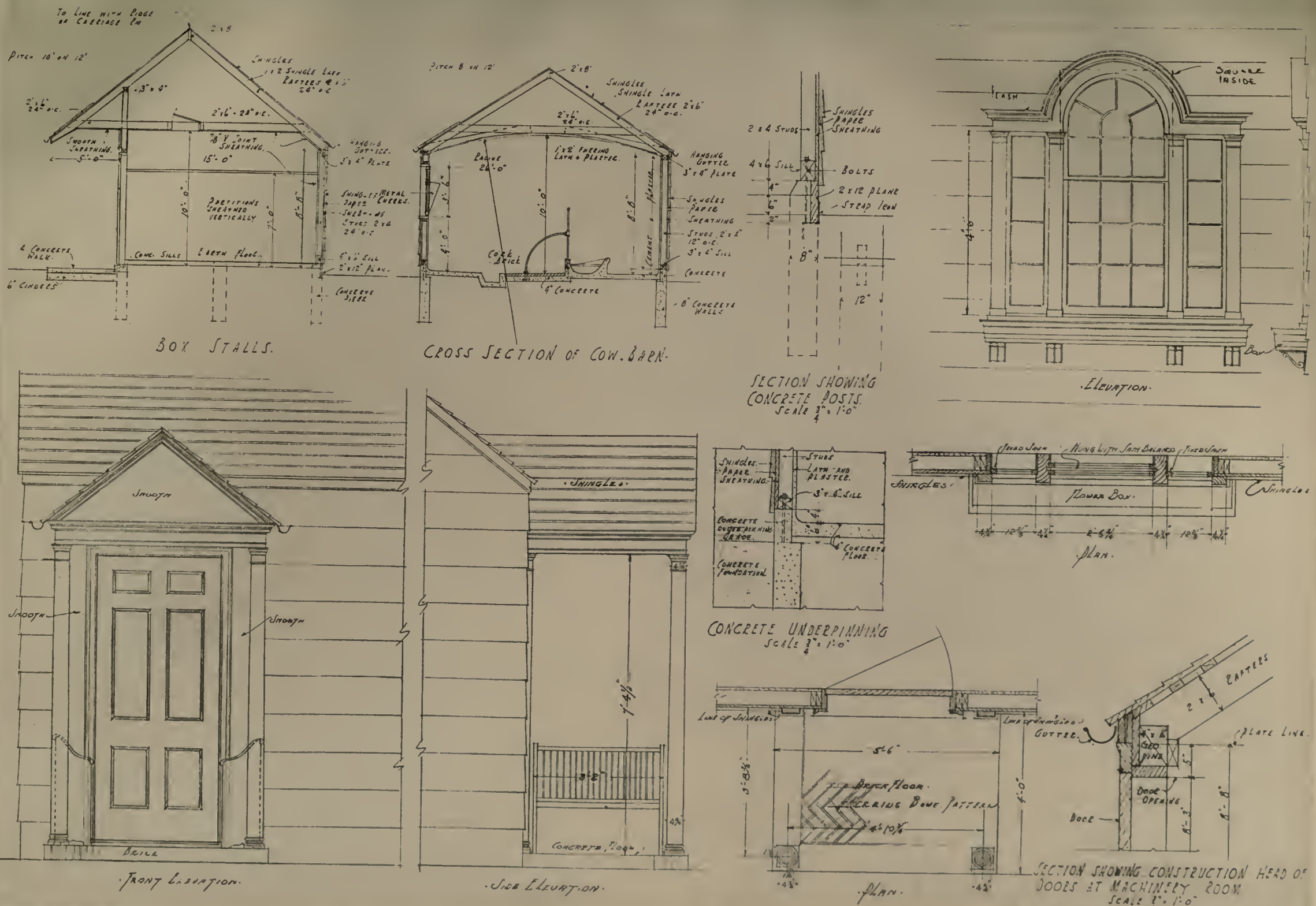
ALFRED HOPKINS, ARCHITECT



Reproduced at the scale of four feet to inch and a half

FARM GROUP, ESTATE OF GEORGE P. GREENHALGH, ESQ., TOLEDO, OHIO

ALFRED HOPKINS, ARCHITECT



Scale sections reproduced at the scale of eight feet to the inch
Details reproduced at the scale of eight feet to three inches

VARIOUS DETAILS

FARM GROUP, ESTATE OF GEORGE P. GREENHALGH, ESQ., TOLEDO, OHIO

ALFRED HOPKINS, ARCHITECT

GENERAL PANORAMIC VIEW

DETAIL REAR OF COTTAGE

DETAIL OF COTTAGE GABLES

FARM BUILDINGS GROUP FOR MR. R. SIEDENBURG, JR., GREENWICH, CONN.

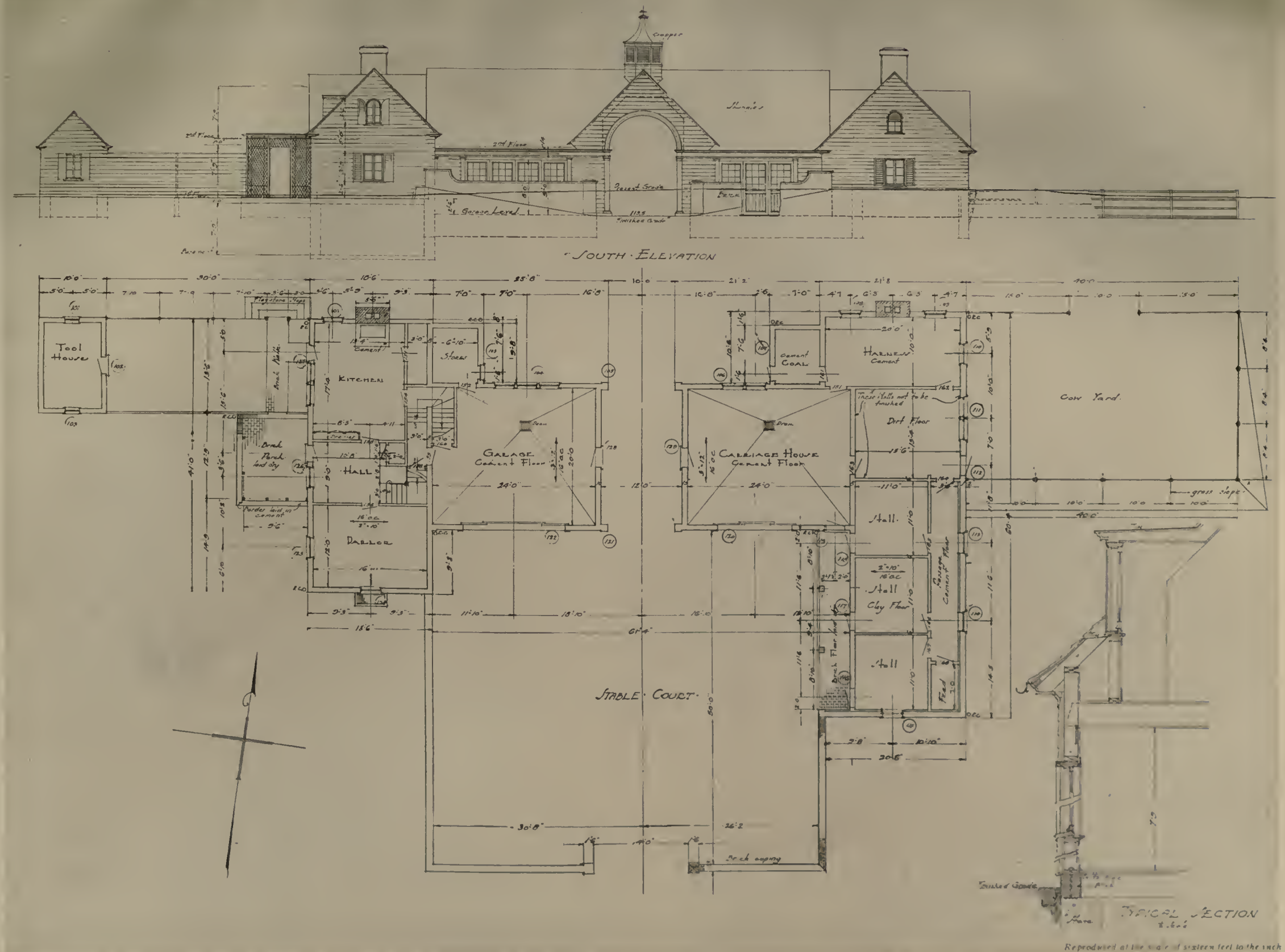
WM. F. DOMINICK, ARCHITECT

SOUTH SIDE OF FARM COTTAGE

VIEW FROM NORTHEAST, SHOWING GARAGE END GABLE AND REAR OF FARM COTTAGE

FARM BUILDINGS GROUP FOR MR. R. SIEDENBURG, JR., GREENWICH, CONN.

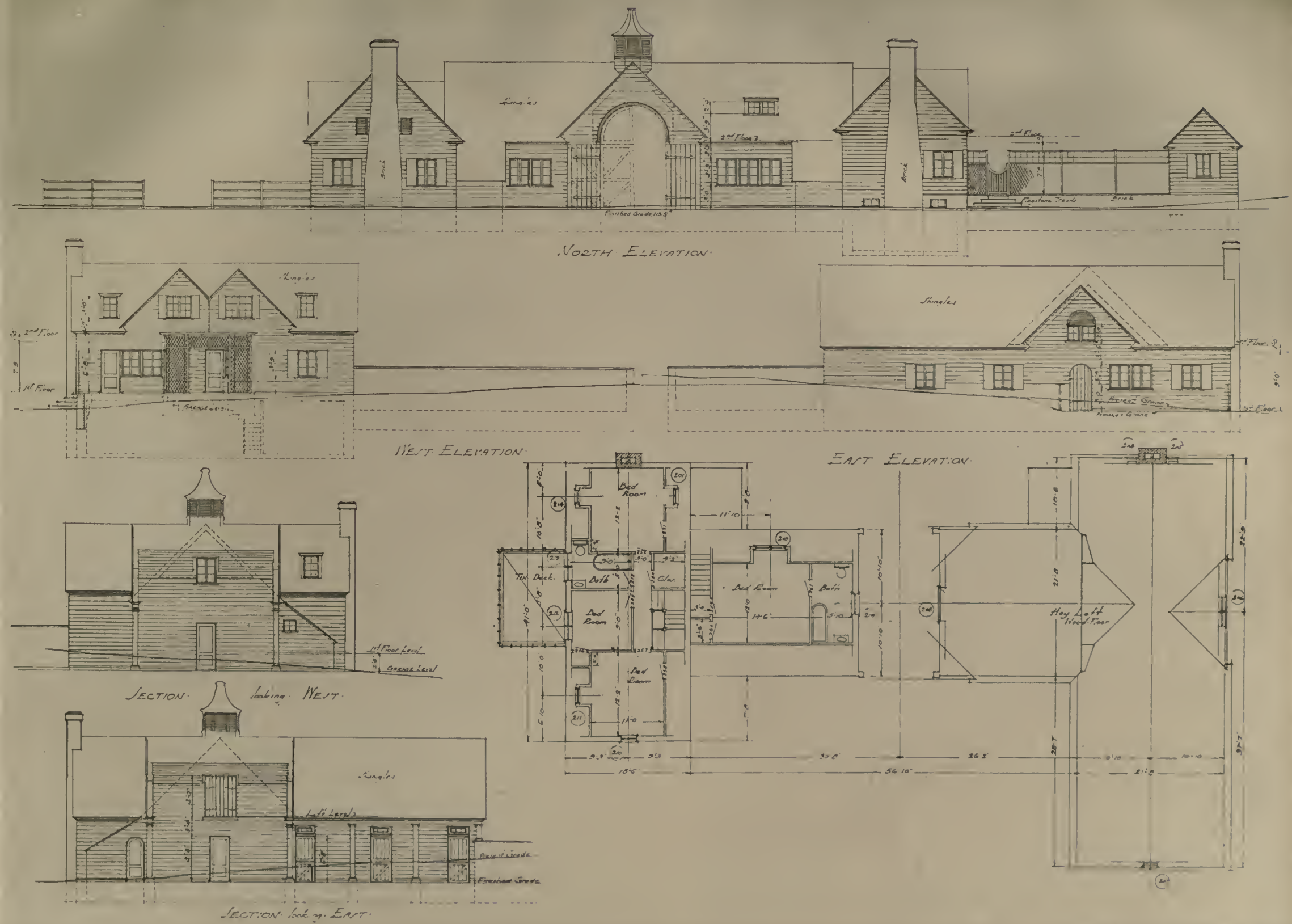
WM. F. DOMINICK, ARCHITECT



Reproduced at the scale of sixteen feet to the inch

FIRST FLOOR PLAN AND FRONT ELEVATION (FACING HOUSE)

STABLE GROUP ON ESTATE OF JOHN STRAWBRIDGE, ESQ., LAVEROCK, PA.



SECOND FLOOR PLAN, REAR AND END ELEVATIONS AND SECTIONS

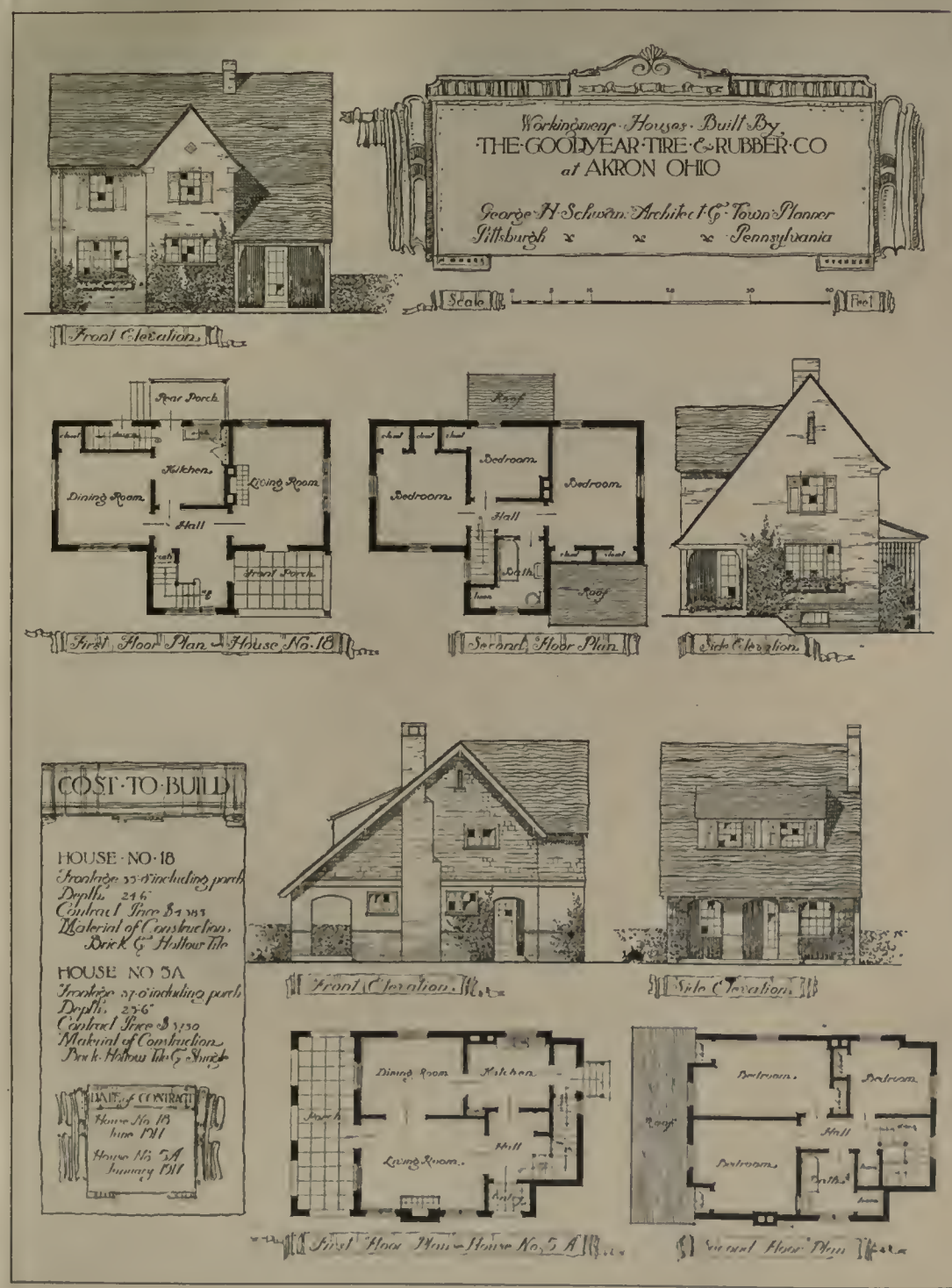
STABLE GROUP ON ESTATE OF JOHN STRAWBRIDGE, ESQ., LAVEROCK, PA.

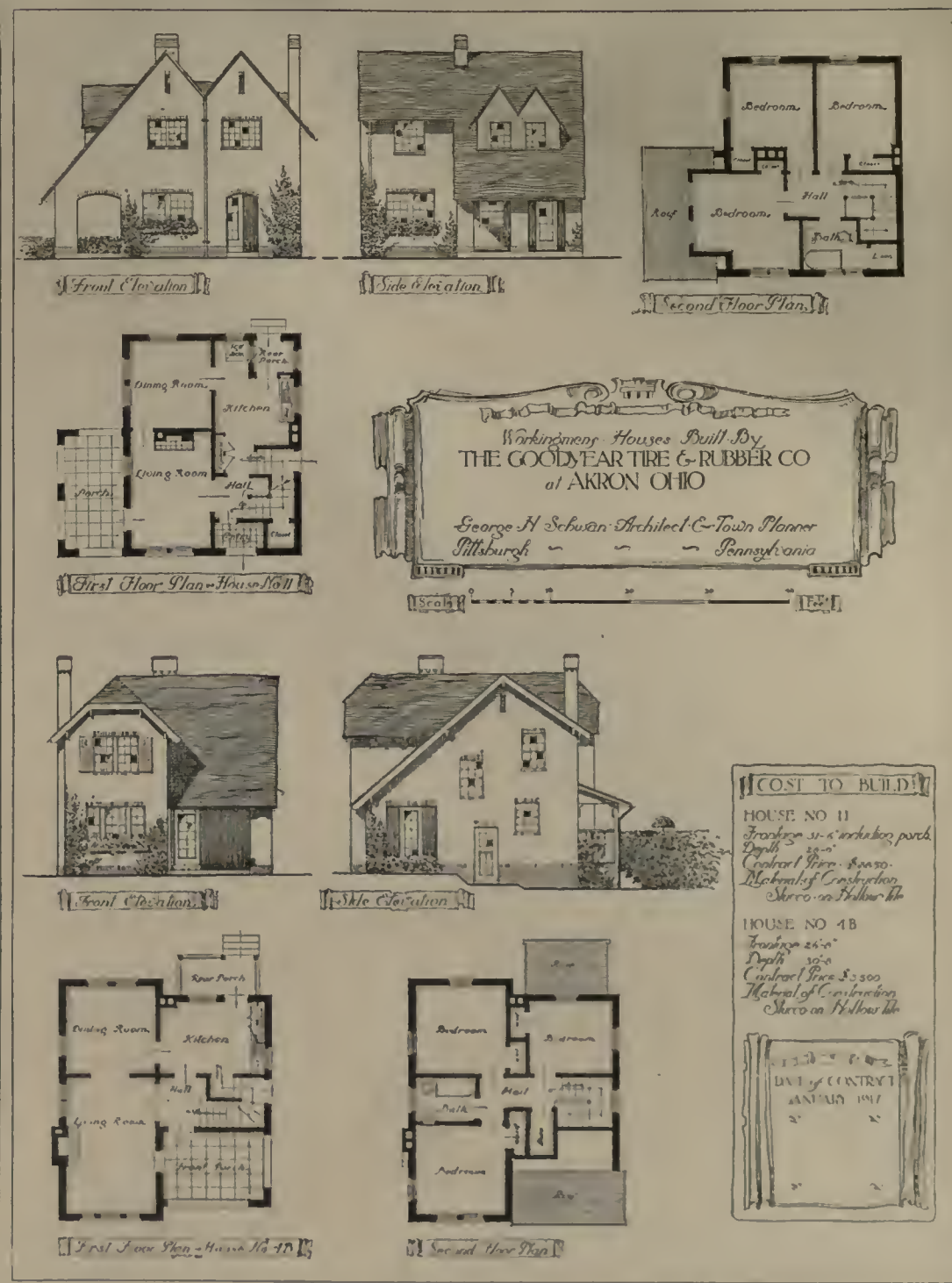
GENERAL VIEW

DETAIL OF PORCH AND YARD

STABLE AND COTTAGE ON ESTATE OF EDWARD L. YOUNG, ESQ., GLEN COVE, L. I.

DAVIS, McGRATH & KIESSLING, ARCHITECTS





Reproduced at the scale of twenty-one feet to the inch

PLANS AND ELEVATIONS OF FOUR TYPICAL HOUSES, NOS. 5A, 18, 11, AND 4B
FOR THE GOODYEAR TIRE AND RUBBER COMPANY, AKRON, OHIO
GEORGE H. SCHWAN, ARCHITECT

SIDE AND ENTRANCE FRONT

VIEW FROM REAR

PLATE XXIX

THE ARCHITECTURAL REVIEW

ST. BRIGID'S CHURCH, WESTBURY, L. I.

F. BURRALL HOFFMAN, JR., ARCHITECT

VIEW OF CHANCEL

LOOKING ACROSS CHANCEL INTO TRANSEPT

THE ARCHITECTURAL REVIEW

ST. BRIGID'S CHURCH, WESTBURY, L. I.

F. BURRALL HOFFMAN, JR., ARCHITECT

The Study of Colonial Architecture

Part II. The Development of Distinctive Features

By Fiske Kimball

If we recognize the anomaly of applying the term "Colonial" to buildings after the Revolution, and even of the nineteenth century, or of restricting it to buildings of the seventeenth, the obvious solution is to return to the original and historical meaning of the term, as covering all the architecture of the Colonies down to the Revolution. This is indeed the only usage tenable over a wide field, as all period divisions should be, embracing not architecture only, but the other arts and culture as well. The great point of division in American history and art—even in architecture, if we regard it more at large—is the Revolution; and the fundamental periods which it divides may properly be called the "Colonial" and the "National." The persistence of a character like that of Colonial architecture in much work of the early National period can best be signalized by the employment of the word "post-Colonial" to apply to this conservative class of work.

The necessary distinction within the Colonial period between the work with Renaissance forms in the eighteenth century and the essentially medieval work of the seventeenth century may best be made by the century names themselves. It is true that they could be designated by the term "Georgian" and the term "Jacobean," which has recently been proposed. Both terms, as thus used, however, have limited and artificial meanings, likely to be productive of further confusion. To the writer it seems best to eschew such ambiguous nomenclature, to use the word "Colonial" in its original sense, and to subdivide—when further subdivision is desirable—by centuries.

Opportunities in the Study of Colonial

The quantity of work already done by no means precludes the possibility of fruitful creative study in any part of the country, even in the best-known regions. Although Salem has been pretty well covered, the equally interesting material in Marblehead, Newburyport, Portsmouth, Newport, and Providence has by no means been exhausted; and many towns in New England, like Portland, Me., or Bristol, R. I., are still almost untouched. Similarly, although the James River mansions are somewhat hackneyed, there is still a wealth of unnoticed houses even in Virginia. Maryland, although much photographed, has been little measured. Perhaps the richest mine of all, however, is South Carolina, where little has been done outside of Charleston, yet where the back country is full of the most beautiful old manors with fine detail.

In the drawings of the pioneers of measuring, moreover, it is only individual details—doorways, mantels, and so on—which are represented, with very few complete façades, and plans still more rarely. There is thus considerable scope for valuable work, even on buildings which have been much measured, in determining those proportions and relations on which we now realize the effect depends far more than on isolated details. The relation to outbuildings and gardens in plan is a point which has also so far hardly been touched.

It must not be forgotten also that the existing Colonial buildings themselves are not by any means the only sources of information and inspiration respecting Colonial architecture. Demolitions, remodelings, and "restorations" have destroyed or spoiled a great number of them, which, if we knew them, would greatly enrich our knowledge of the style and enhance our admiration for it. To discover these lost beauties is not impossible in many cases, if we employ certain neglected classes of evidence. First among these evidences are the original designs of the Colonial builders themselves. For the early post-Colonial buildings these still exist in astonishing numbers; for buildings within the Colonial period many are already known; and wider search will doubtless reveal others. Thus the Historical Society of Pennsylvania has Andrew Hamilton's crude original design for the old State-House in Philadelphia (Independence Hall), begun in 1732; the Ridgway Library in Philadelphia has a copy of Sir Francis Bernard's design for Harvard Hall in Cambridge, 1764; the Coolidge collection contains Jefferson's elaborate studies and drawings for the first build-

Royall House, Medford, Mass., 1737-1739

(From Chandler's "The Colonial House")

The earliest dated example of the tall pilaster in America, characteristically used with only a fragment of entablature. The dates are fixed by Isaac Royall's settlement in Medford, 1737, and his death, in 1739.

Apthorp House, Cambridge, Mass., 1761-1764

(From Drake's "Historic Mansions Around Boston")

Here isolated pilasters frame the entrance as well as the building as a whole. The erection of the building must fall during the residence of its owner, East Apthorp, in Cambridge, which lasted only from 1761 to 1764.

Apthorpe House, New York, 1767 (?) (Demolished)

(From a drawing by E. R. Tilton, 1888)

The pilasters are no longer merely isolated, but are repeated at every bay and united by a continuous entablature. The date is stated circumstantially in "The Memorial History of New York."

Pickman-Derby House, Salem (Demolished)
As Remodeled about 1790

(From a photograph by Fox, taken 1865)

An example of post-Colonial adherence to the early type represented by the Royall house. The paper used in McIntire's drawing for it is water-marked 1786, which would fix the date of building a few years later.

THE DEVELOPMENT OF PILASTER TREATMENT
A Colonial motive which was retained after the Revolution till about 1800

ing of Monticello, 1771-75. Such drawings may be looked for in three principal places: in the hands of descendants or successors of the original owners of the buildings; in the hands of descendants of Colonial architects and builders; in public institutions such as libraries and local historical societies. Among the same groups may often be found the original contracts, specifications, accounts, and correspondence relating to the construction of early buildings, as well as paintings, drawings, and photographs of buildings now destroyed or modified, and even actual details preserved intact, such as mantels and staircases, or balusters, newels, and urns. Finally, there are the engravings in old books, especially descriptive and topographical works antedating photography, showing many designs otherwise lost.

Scarcely more regarded by the architect than the manuscript documents and the original drawings and engravings, are the documents of all sorts which have been printed or reproduced in the county histories, the publications of State governments and local historical societies. Almost every county and town of architectural interest in the original Colonies has its historical volume, the better ones containing, besides the record of vague traditions, a mass of important authentic documents which throw additional light on the form, the dates, and the authorship of the buildings of the locality. The long series of "Archives," "Proceedings," and "Collections" of the several States often readily furnish the answers to questions which could never be settled by study of the buildings alone. Thus the date of the building of "Whitehall," near Annapolis, one of the most important of all the Colonial mansions, is fixed between 1764 and 1768 by documents cited in J. D. Warfield's "The Founders of Anne Arundel and Howard Counties;" and important facts bearing on the portico of "The Woodlands," Philadelphia,—one of the very earliest anywhere in the Colonies,—are given in the letters of the owner, William Hamilton, published in *The Pennsylvania Magazine* for 1905.

The Pinckney House, Charleston, 1746 (Demolished)

(From Smith's "Dwelling Houses of Charleston")

The first pedimented frontispiece with the colossal order in American domestic architecture, still limited to pilasters only. The date given is that of the specification for the carpenter's work.

The Miles Brewton House, Charleston, About 1765-1769

(From Crane and Soderholtz's "South Carolina")

An early example of the free-standing portico with superposed orders, which preceded the free-standing colossal order. The date of completion is evidenced by an advertisement of the joiner, Ezra Stiles.

"Whitehall," Maryland, About 1764-1768 Portico Somewhat Later

(From Corner and Soderholtz's "Maryland")

Although the house is definitely dated by documents, a structural examination shows the portico to be an addition, which we cannot be sure to have been pre-Revolutionary.

"The Woodlands," Philadelphia, About 1770. Portico Probably Added 1788

(From Wise and Beidleman's "Colonial Architecture")

The house was erected shortly before the Revolution, but shows evidence of a change of scheme on this side. The portico thus probably dates from a remodeling of which the owner wrote in 1788.

DEVELOPMENT OF THE TALL PORTICO IN DOMESTIC WORK

No domestic example of the free-standing colossal order has yet been proved to be of pre-Revolutionary date

It is surprising, in view of the study already devoted to individual buildings, how little has yet been done to trace the course of development through which different features passed during the long period of their use. We know the successive changes which the Greek Doric order or the Gothic flying buttress underwent, as the result of experiment, far better than we know the similar changes through which Colonial motives, such as doorways or interior paneling, passed in the course of study by generations of craftsmen. The growth of each of these features, with the plan, the façade, and the ensemble in various types of buildings, is worthy of individual study, which cannot fail to bring greater intelligence and sympathy in modern designing with similar forms.

Another fruitful topic for investigation is the sources of later Colonial inspiration in the architectural publications of the eighteenth century. The existence of a general influence from these has frequently been pointed out. Too often, however, a single book which has happened to come to an individual's notice, such as Batty Langley's "The Builders' Jewel," is but carelessly cited as the source of this influence; and no attempt is made to trace individual designs to a specific plate or group of plates, as can often be done with astonishing conclusions as to the methods of work of the old Colonial architects. The old publications differed greatly among themselves in the style of work represented and inculcated. Vague references to the influence of the Italian Renaissance or of Wren in Colonial works may thus often be replaced by specific statements of indebtedness to Palladio, to the French decorators, to James Gibbs, or a dozen others. In the competition for the Federal buildings Hoban's design for the President's House was taken from Gibbs's plates LII and LIII; McIntire's for the Capitol, from Gibbs's plate XLI; Dobee's for the Capitol and Jefferson's for the President's House, from Palladio's Villa Rotunda.

(To be concluded)

The "Business" of Architecture

Part IV. Section 3

By Daniel Paul Higgins

The series of articles which has been contributed by Mr. Daniel Paul Higgins, of Mr. John Russell Pope's office, and printed under the heading of "The 'Business' of Architecture," reaches its conclusion in this, the final instalment, printed in this issue.

Mr. Higgins has dealt, first, with the general problem of office organization, and particularly with the grouping of departments and the work coming under the head of its business executive control. As is apparent from the chart published below upon this page, however, in order completely to cover the subject of the Business Organization of the Architectural Office, the detailed handling of the three departments most important to producing work of the highest average in the "Profession" of Architecture still remains to be considered. These three departments include the Supervising Architect's Division and the Departments of Design and Interior Decoration. The next article in this series will appear in the May issue of THE ARCHITECTURAL REVIEW. *It will deal with the Department of Design, and will be written by Mr. Howard Dwight Smith, formerly a member of Mr. John Russell Pope's organization, and now professor in the Department of Architecture in Ohio State University and designer to the University Architect. Mr. Smith will deal as thoroughly and helpfully with the problems of the special departments in the architectural organization with which his work has previously been directly associated, as Mr. Higgins was able to do in describing the general organization and especial routine of the work of his own particular department.* — EDITOR.

THE question of the functions of the business executive has been quite thoroughly discussed in those articles which have preceded this instalment. His position is, of course, one which can be, indeed, ought to be, filled by a person not technically trained in architecture itself. But the question of the selection of men to occupy the other positions of authority in the organization resolves itself into a matter of discrimination among them, placing each where his natural or trained ability will be of most value in the directing of the office activities pertaining to design, draughting, job supervision, engineering, interior decoration, furniture, and fittings. Individual ability and personality must always necessarily be taken into consideration in making any such selection or allotment of work. In order to make the proper physical divisions of the architect's practice into departments entirely and finally clear, a graphic chart (Fig. 15) has been made to show the various heads of departments, and their relation to the architect and to each other.

The prime function of the architect is, first, to find a client; then, to find out what the client wants,—or to create in the client a want!—and the third step is to design something to *fill* that want. After a definite scheme is finally accepted and decided upon, the job is turned over to the head of the Department of Design, a man of unusual designing ability, whose function it is to seek to improve the design from the varied view-points of conception, use of materials, texture, and ultimate effect. No work leaves this department without being studied from all angles, and a great deal of design is done with the aid of models, and even carried considerably into the selected materials themselves. It is well to note also that, due to the unusual ability and skill of the head of this department, the architect himself is seldom required to give any further time to the details of design after a scheme is once finally determined upon and work in the office has been definitely started and is well under way.

Obviously, in a large practice, the promotion of work, and the designing of the same, occupies the major part of the architect's time, and because of this, the architect in example has wisely chosen the man who is regarded as his chief assistant in matters pertaining to the management of the buildings after they leave the Designing Department—a position carrying with it the title of supervising architect. This man's ability is also exceptional, in the sense that he has been educated and experienced in both design and engineering, possessing rare executive ability, and, in general, he is able to represent the architect in the most complete and desirable manner possible. The architect has found it wise to have the Engineering, Draughting, and Inspection Departments all placed under the direction of the supervising architect, thus best to

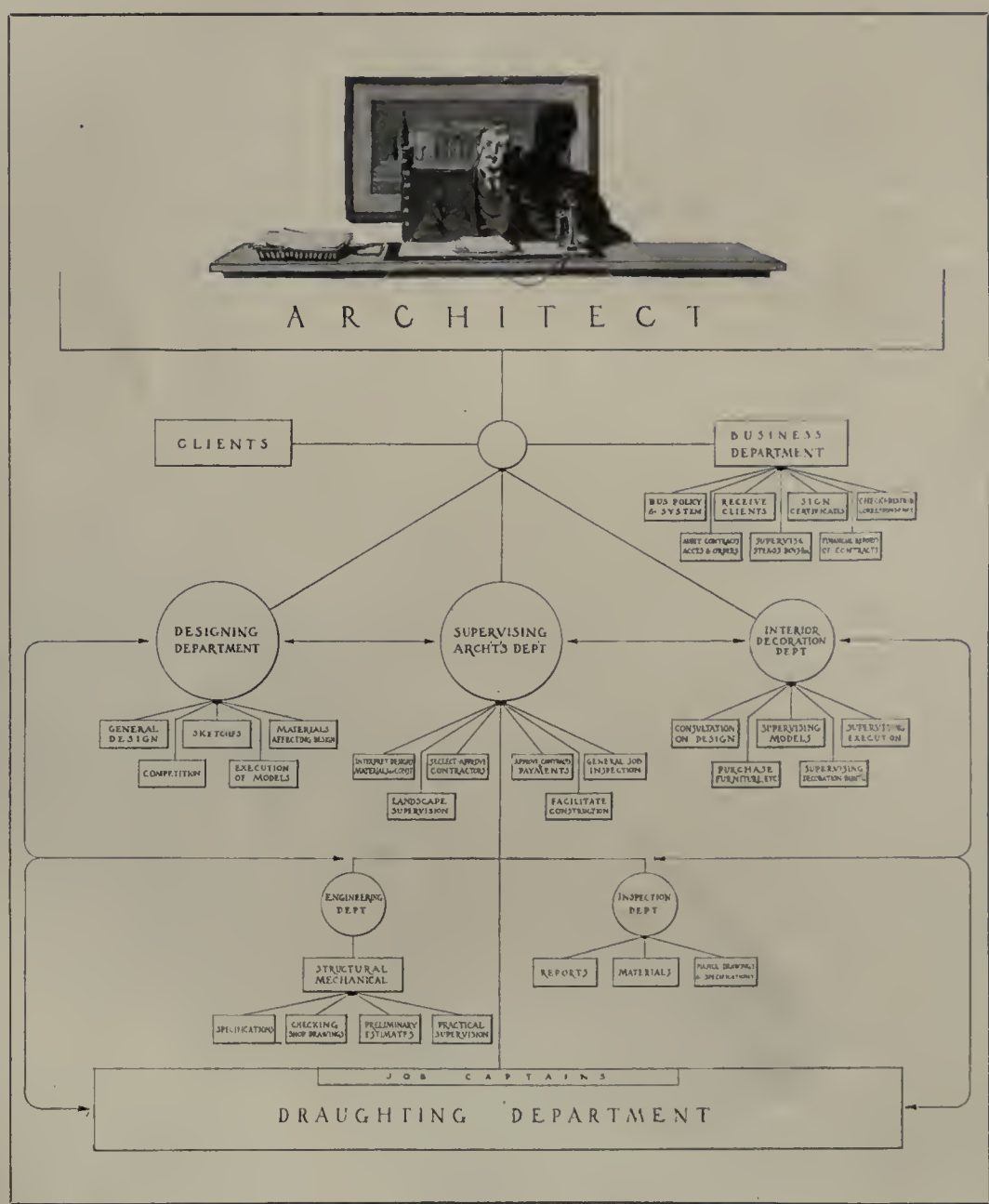


Fig. 15. Chart of the Complete Office Organization of the Architect

follow the theory of the concentration of responsibility for execution of work and to dodge all the apparent drawbacks to its successful operation.

Now it must by this time be quite plain that the supervising architect occupies a very responsible position, as he is held accountable not only for the construction of work, but also for the character in which the work is executed. In this he is ably assisted not only by the head of the Design Department, but also by the head of the Interior Department, a man of special training who is in charge of all interior design, and who supervises the construction of special interiors, models, etc., in the shops and on the work. He is the person who thus becomes finally responsible for harmonizing the work of all the many different trades and crafts so necessary to carry out to completion the best grade of interior decorative work. The volume of work to be carried on in this direction necessitates the employment of a man who has made a life study of this division of the work, and whose experience covers a large field, both in this country and abroad. It might be said here that this department, that of Interior Decoration and Furniture, has proven exceptionally profitable to the office, both from a view-point of its money income and reputation.

With the arrangement here made, not only is the architect left free to design and compose his ideas to perfection, but likewise is the client infinitely better served as well—and everything pertaining to the completion of the building is being carried forward hand in hand, under the direct influence of the architect, thereby insuring far better results than would otherwise obtain. This is especially true of the work of this department, which requires unusual and exceptional training in the individual capable of realizing the architectural point of view, without which no final result can be wholly satisfactory, at the same time that he is able to give sufficient time and pains to the determining and carrying on of all the fine and complicated *minutiæ* with which the final details of decorating, furnishing, and fitting up the house are ultimately concerned.

The designing ability and good taste of the supervising architect are most helpful factors, as he is always in perfect harmony and sympathy with the Designing Department, and so thoroughly understands and is familiar with the final effect that is required. He is in this way able to decide in a final and satisfactory manner all questions arising to affect both design and color during the execution and completion of work; and by being able to discuss such points intelligently with the clients, he thereby saves the architect many unnecessary interviews, and gets in the end the full artistic effect and refinement of detail that is desired.

All work coming under the Engineering Department must be laid out for the supervising architect by that department, and it is necessary for the head of that department to be constantly attentive to see that standard practices are developed and, after such development, are put into service. He also sees that all data are promptly and properly classified as to specification, mechanical equipment, etc. It is a common shortcoming in many office organizations not to use the information that has been developed by experience, because it is not most readily available. This is directly traceable largely to neglect to classify, to file, and properly to index the available data promptly. There is a wealth of information in this—as in every other architect's files; only in this case it is so arranged that it is *always* most available and immediately accessible.

Engineering work may be divided into two departments,—Structural and Mechanical. In some offices these are taken care of in separate departments. In this organization they are united under one head. Under the head of Structural Engineering are included all steel, reinforced concrete, and similar work, including the designing, and, where work is laid out by contractors, the checking of same. Under the head of Mechanical Work is included the layout of all mechanical plants, including heating, plumbing, lighting, power-plants, refrigeration, etc.

The engineer takes care of all draughting and specifications in connection with the above classes of work, and in this case he becomes the general practical man, writing all specifications and directing all practical work, coaching job captains, superintendents, etc. He may also make estimates on work, and visit the various jobs for the purpose of seeing whether the work under his own department—or the work as a whole, as the case may be—is being properly carried out.

In a large way, the same methods used for planning work in the Engineering Department apply to the Draughting Department. For example, a job, or several jobs, are given in charge of a high-priced man in the department, who is nominally known as a "job captain," and who lays out the work ahead of the younger and less experienced men, applying the principles of the division of functions, and dividing each job into parts, so that each part can be done in perfect and harmonious sequence. Here, again, the engineer is of service, for, as has been explained, he possesses the highest technical ability and a keen sense for the relative importance of detail, and so is quite capable of coaching the job captains on all technical points. He is also responsible for thoroughly checking all drawings and specifications before they leave the office.

One of the important duties of the supervising architect is to exercise supervision over and control the inspection of construction work. It is he who makes the decision in the first place as to what materials are to be used and how the work is to be done; and upon his judgment, therefore, largely depends the question as to whether the work is done as well as has been required. The inspectors and clerks of work are also, in turn, given specific instructions to follow the plan and specifications that are furnished them, and are not allowed to pass finally upon any exceptions without the express approval of the supervising architect.

The discussion in these articles has dealt principally with problems of organization; for it is maintained that, without organization, the *business* of architecture cannot be wholly successful. Dealing, as the architect does, with organizations, he cannot go too deeply into the working details of each of the departments of his own or other organizations. Each is in itself a fit subject for separate discussion; and the study of the functions of designer, supervising architect, engineer, and decorator in specific organizations should be of great interest and value to the profession.

The question as to whether a permanent head of design should be maintained in an organization, or whether designers should be taken in only as individual problems present themselves, is an important one. The question of the division of the work of a large organization among several supervising heads is also quite pertinent. In such a case one might rightly deal with residence work, another with monumental, and still another with commercial; while it is obvious that the field of Interior Decoration and Furniture touches upon that very delicate question of the proper relations to be maintained between the office of the architect and the trade.

As it is proposed to continue this analysis of the architectural office organization through those other departments necessary to the successful business practice of the profession of architecture; of which the organization in relation to the complete working-force of the office has been covered in this series of discussions, the writer does not feel that he can carry any further the advice he has here striven to give; but in concluding his part of this treatise on "The 'Business' of Architecture," he would again like to point out that, owing to the complete and thoroughly tested coöperation of such a smooth-working and efficient organization as has here been described, it becomes possible to say that the architect's time and attention are absolutely only required to be given at the beginning of the problem and at the completion of the work. He is thus left with ample and sufficient time to give his personal attention to his work wherever he sees an opportunity to better or improve it in any detail, branch, or department. He has also ample leisure remaining to consult with the heads of his organization, to interview his clients, and to keep in touch with those important affairs that always require his attention outside the office, and so to help to keep open those channels of communication by means of which he may most expect to find new opportunities to develop his practice, and thus keep and maintain his organization fully occupied in the steady and profitable exercise of its normal functions.

Goodyear Heights

A Garden Suburb for Wage-Earners at Akron, Ohio

By Ralph F. Warner

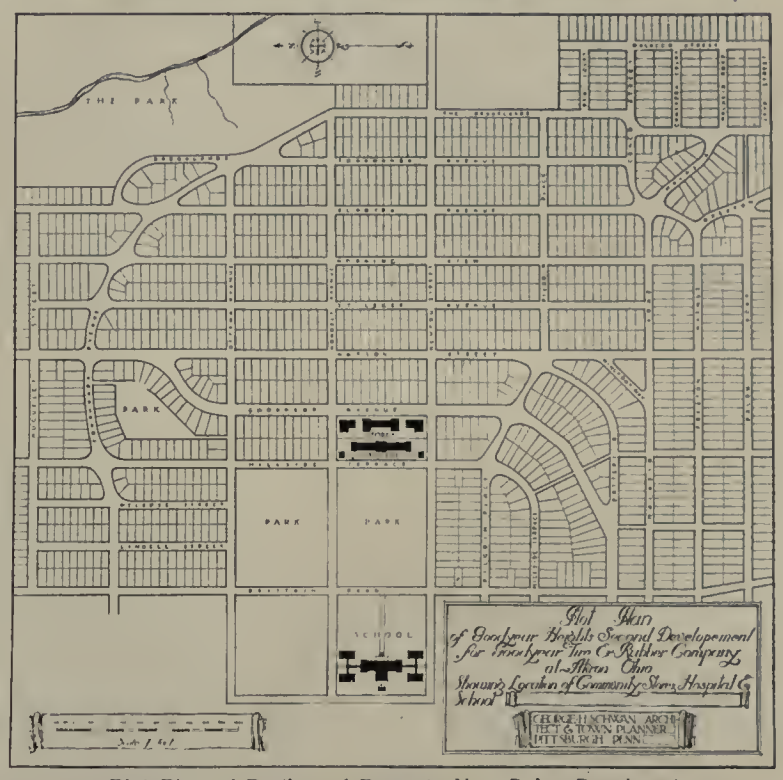
THE nation-wide impetus which the war has imparted to the movement for better housing of wage-earners. and the entrance of the Federal Government upon a program of house building involving the expenditure of at least one hundred million dollars in the current year, has led logically to a demand for more exact knowledge with regard to the scope and results of the various industrial housing enterprises that were conducted by manufacturers and semi-philanthropic organizations in this country prior to the outbreak of the war.

A survey shows that one of the most important classifications, with respect both to capital invested and results achieved, includes those enterprises promoted by a single manufacturer with an established plant, either within or adjacent to a city of considerable size, for the purpose of supplying low-priced houses at cost to employees in his plant. Goodyear Heights, the garden suburb development of the Goodyear Tire and Rubber Company, at Akron, Ohio, is one of the largest and most interesting operations of this type in America.

When the development work was started, four years ago, the company had no housing problem on its hands. The enterprise was conceived with two objects in view: first, to enable the man earning average wages to own a good home in an attractive environment, convenient to his work; and second, to increase the efficiency and contentment of the employee by raising the standard of living-conditions in his home. In pursuance of these aims, and as a result largely of the interest and energy of Frank A. Seiberling, vice-president of the company, 450 acres of land, formerly used for farming and grazing, were acquired near the Goodyear factories, at a cost of $300 an acre. The land, of generally rolling character, is of higher altitude than any other residence property in Summit County, and affords a particularly fine outlook and distant views toward the east and south across the valley of the Little Cuyahoga River.

Group of Low-Cost Houses Under Construction

An experiment was first made in the development of 100 acres lying nearest the Goodyear factories. The plan, drafted and carried out by Warren H. Manning, landscape architect, of Boston, and reproduced in the REVIEW for April, 1917, provided 436 lots, with an average width of 50 feet and a depth of 115 feet. Streets, adapted to the contours, were made 50 and 60 feet wide—with one exception, in the case of the main traffic street and boulevard, Goodyear Avenue, traversing the entire section, which was given a width of 70 feet. Sub-surface utilities, sewers, storm-drains, water, gas, and electricity mains, were installed, and pavements, sidewalks, curbing, and gutters substantially constructed. Within a little over a year from the beginning of operations, in 1913, 111 houses were erected in the 100-acre operation, a few from designs by Mann & MacNeille, architects, of New York. It is interesting to note that in the first operation the simplest types of houses were the most acceptable. Hollow tile and stucco were specified, but, notwithstanding the fact that Akron is a tile manufacturing center, this form of construction was, at that time, finally aban-



Plot Plan of Portion of Property Now Being Developed
Warren H. Manning, Landscape Architect

House No. 18

Houses Nos. 13 and 19

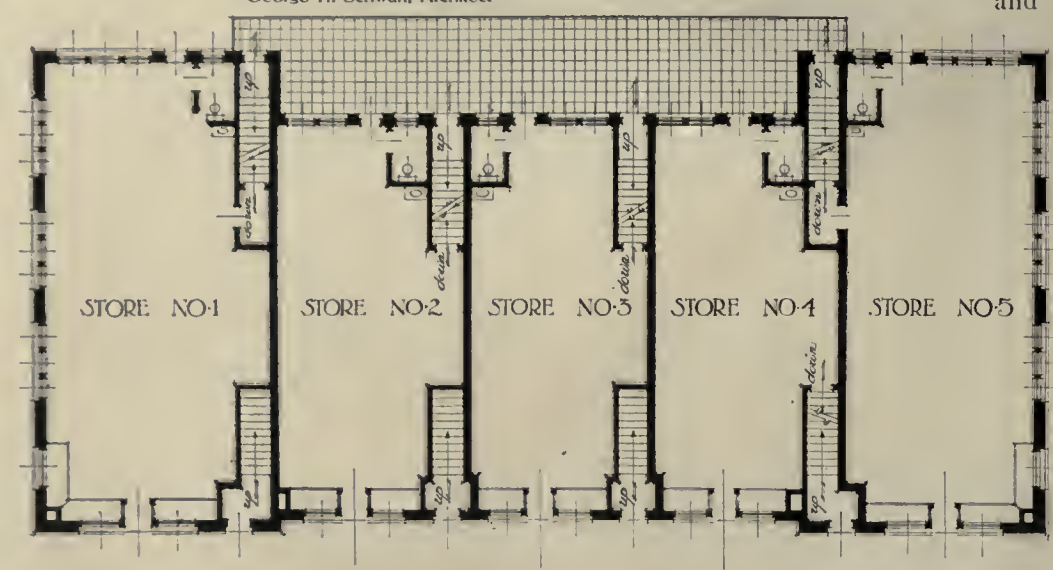
Photographs of Three Houses During Construction
George H. Schwan, Architect

Reproduced at the scale of twenty-four feet to the inch

Elevation, Community Store and Apartment Building
George H. Schwan, Architect

doned in order to keep down costs. Wood with stucco, on metal lath, and brick veneer were found cheaper. In all, 350 houses have been erected in the 100-acre tract to date.

With the outbreak of the war, in 1914, the Goodyear Tire and Rubber Company was confronted for the first time with a real housing problem. The number of employees doubled in a few months. The Goodyear Realty Company thereupon took up the development of the remaining 350 acres, lying to the northeast of the first tract. The landscape plan, also by Warren H. Manning, provides 1,500 more lots, averaging 50 feet by 115 feet each, and is so laid out as to be properly integrated with the area previously platted and developed, and with the probable future development of the general city plan.



Community Store and Apartment Building
George H. Schwan, Architect

Playgrounds and small parks, totaling 28 acres, within the property area, and two other park areas contiguous thereto, of 28 and 40 acres respectively, give a total park area of nearly 100 acres. Of the entire Goodyear development 23 per cent is given to streets, 18 per cent to parks, and 63 per cent to saleable lots.

The architect for the Goodyear Heights Realty Company is George H. Schwan, of Pittsburgh, who has planned 1,000 houses, 500 being started during 1917. Including all houses erected since the beginning of operations in 1913, 926 dwellings are now either completed or are in course of construction.

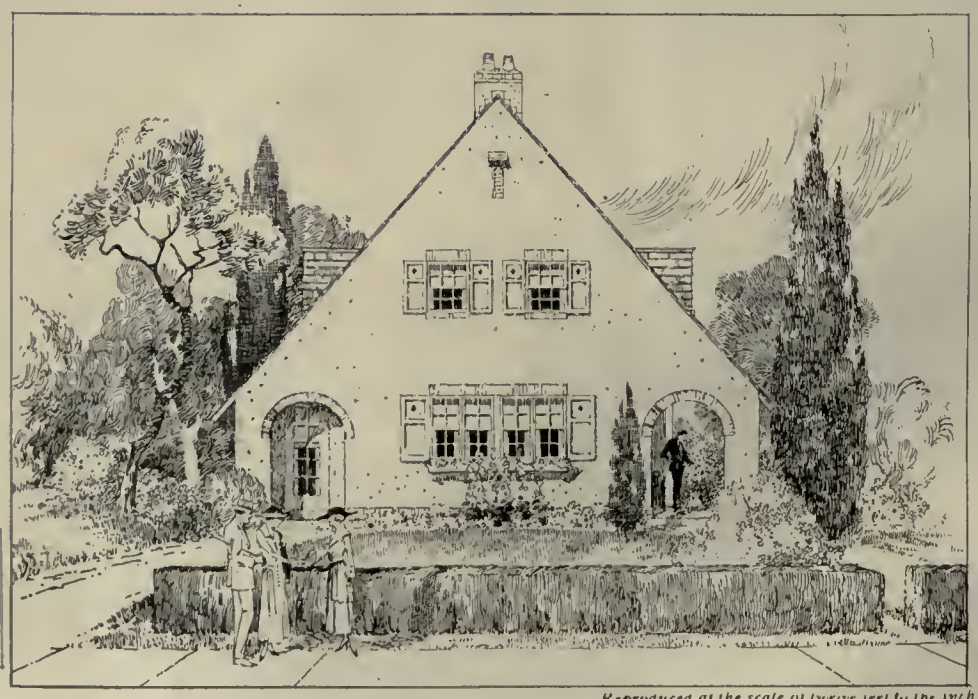
The dwellings are of the single-family, detached type, with five or six rooms, bath, cellar—but no attic. Houses have sewer connections, water supply, gas, electricity, and hot-air heating; no wash-trays or tubs, but a hot and cold water connection is left in the basement.

The features to promote social welfare and add to the general comfort of employees have also been unusually developed. The athletic field in Seiberling Park, the variety of open spaces for outdoor recreation, the girls' dormitory, the hospital, public schools, and stores are all examples of what are now considered essential parts of any well-conceived modern housing enterprise.

Wall construction for the houses now being completed is brick backed up with hollow tile, or stucco on hollow tile. This has been varied in some cases by making the second-story walls and gables of shingles, of clapboarding, or of stucco. Frame construction has been used in only a few of the latest houses. Foundations are of hollow tile, with concrete footings. Roofs are of slate, and porch floors of cement. The first-story flooring is of double thickness, the wearing surface of hard pine and oak, and interior trim of the same material.

A study of the floor plans will show that for convenience and compactness they are, with some exceptions, excellent. The rooms are of good sizes, and studied with a view to arrangement

Floor Plans, Cottage No. 13
George H. Schwan, Architect



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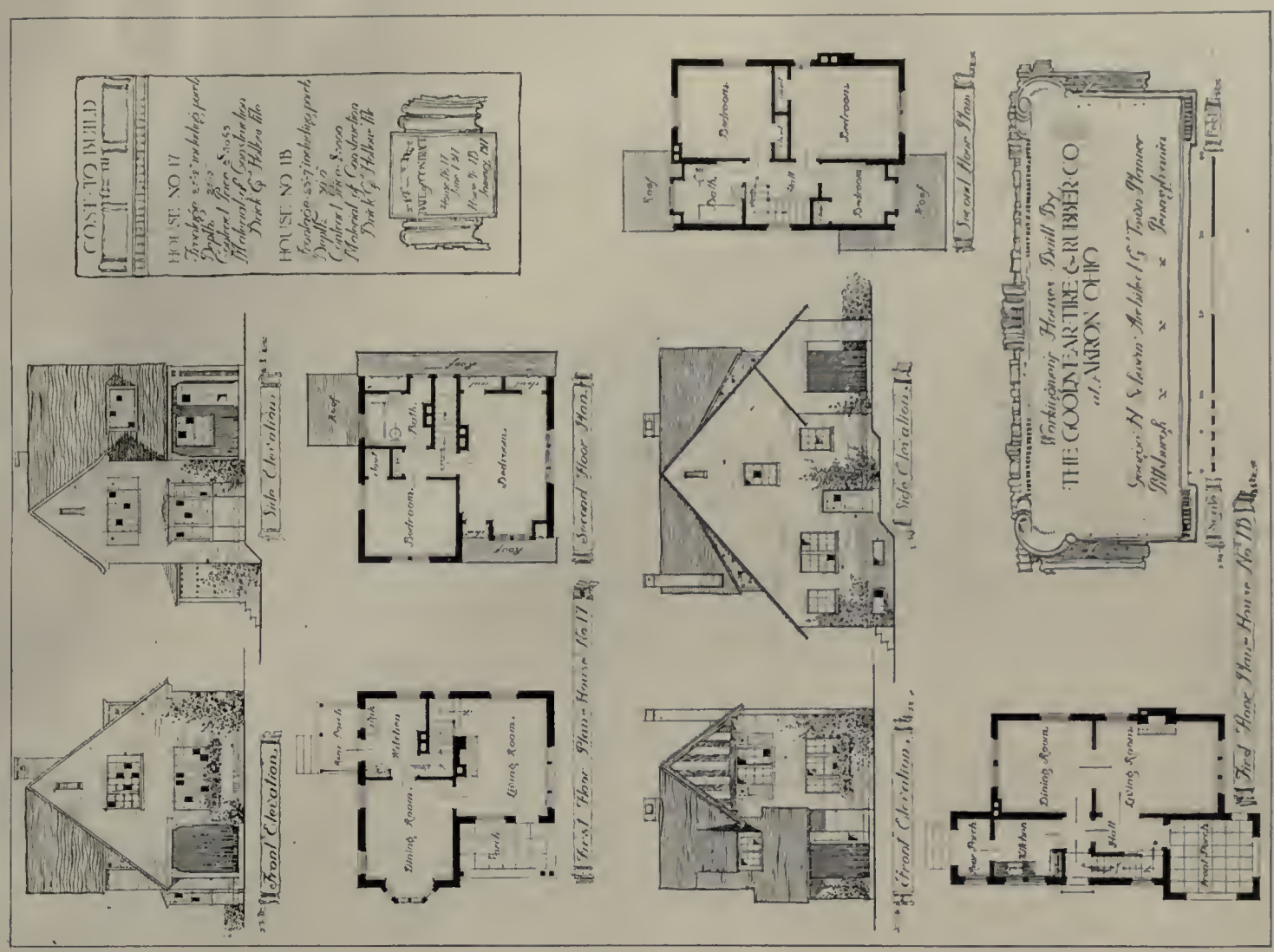
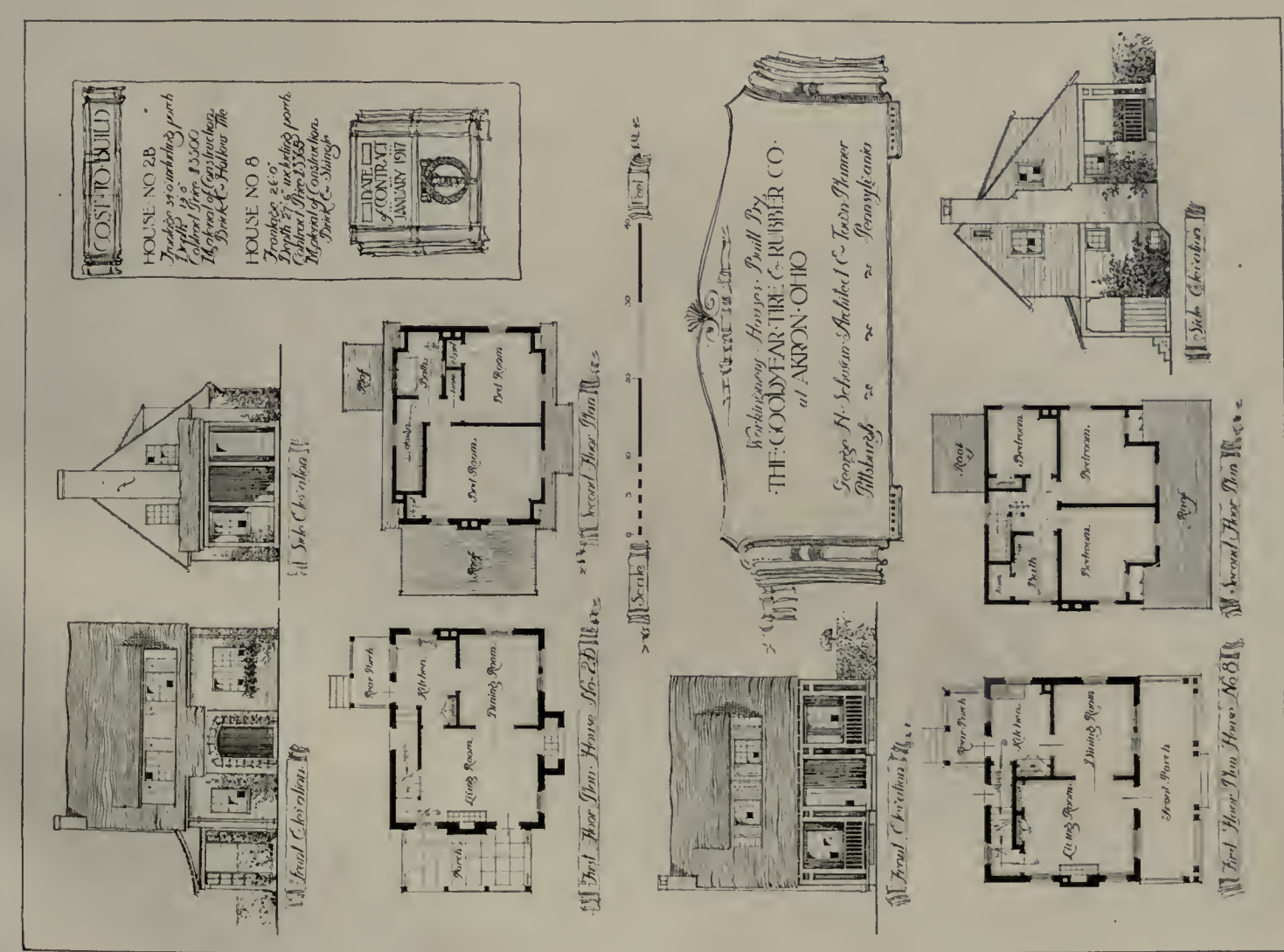
Elevation, Cottage No. 13
George H. Schwan, Architect





PLANS AND ELEVATIONS OF FOUR TYPICAL HOUSES, NOS. 2B, 8, 17, AND 1B, FOR THE GOODYEAR TIRE AND RUBBER COMPANY, AKRON, OHIO

GEORGE H. SCHWAN, ARCHITECT

Reproduced at the scale of forty-eight feet to the inch

Group of Working-men's Houses for Goodyear Tire and Rubber Co. Development, Akron, Ohio
George H. Schwan, Architect

of furniture. Ample clothes closets are provided in nearly all bedrooms, and a linen closet in the upper hall or bathroom. All bedrooms have independent communication with the stair hall and bath. The living-room, of comfortable size in each case, generally has a fireplace. Also, all the houses have a front porch and an enclosed rear porch. In houses where the front doorway is not protected by a covered porch, vestibules are provided. In some of the plans a bathroom without cross-ventilation occurs, but in general this problem has been satisfactorily solved. Headroom has been sacrificed in some of the types for picturesque roof lines.

House No. 5

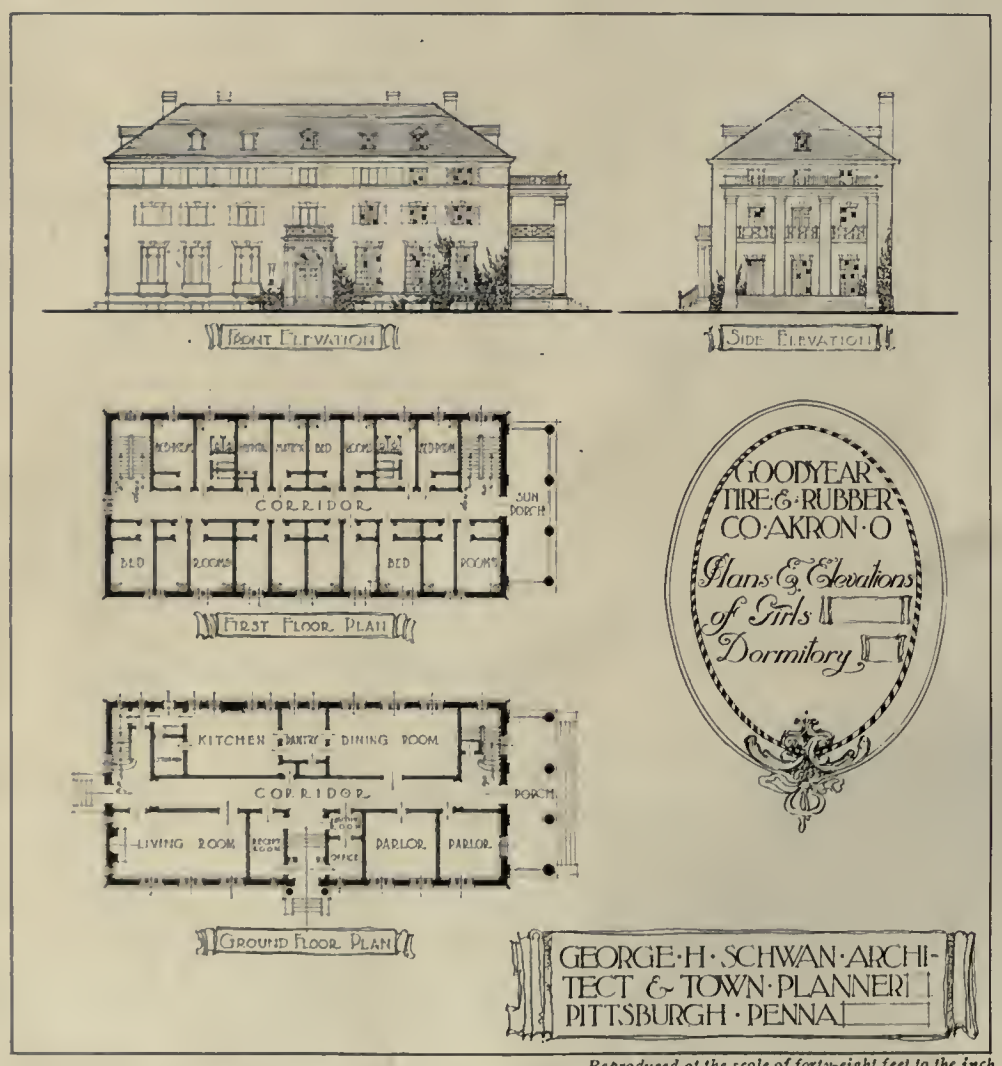
House No. 11

Photographs of Two New Houses, George H. Schwan, Architect

Of the various types evolved, house No. 2A is probably one of the best, and shows admirably what are, in general, the most desirable features of a wage-earner's house (see Plate XLI).

There are between forty and fifty different types of houses selling at from $2,400 to $4,450. In the 500 houses begun in 1917, 100 are priced at from $2,400 to $3,100; 130 at $3,200; 55 at $3,300; 55 at $3,500; 135 at from $3,600 to $3,800; and 25 in excess of $3,800. A large proportion lies between $2,400 and $3,200,— which best conforms to the average wage paid in the Goodyear factories, which is $27 a week, though many earn a much larger amount.

In considering the prices at which these Goodyear houses are to be sold, it must be borne in mind that the labor situation and the cost of building materials have had their effect in increasing building costs. Yet the available range in price is adapted to attract employees in all grades of the wage-earning scale.



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Plans of Girls' Dormitory Building, George H. Schwan, Architect

In the thirty or forty different houses devised by the architect, the rectangular plan predominates. Yet there are a certain number of designs — though but a small percentage of the whole — that depart from the rectangular plan. In a development of 1,000 houses, the architect is justified in introducing a few houses to relieve monotony and produce a picturesque effect; but it is important to note that such variations in plan, and the introduction of bays, receding porches, ells, offsets, and the like, give less available floor area than could be enclosed with the same extent of wall surface on a rectangular plan, and, in many instances, increase the expense by complicating the form of roof construction. In most cases, desirable variety and charm may be obtained without departing from the rectangular plan by the adoption of carefully studied variants in roof slopes, eaves, porches, lattice, doorways, fenestration, color, texture of materials, and the like, and then utilizing to the fullest extent the possibilities of grouping, road-planning, and landscape development.

Even a brief survey of the Goodyear Heights enterprise would not be complete without commending the admirable features of the selling-plan, with its provision for two per cent down as payment on the houses as against the usual real-estate practice; the arrangement of the mortgages over a 20-year period; the plan for eliminating speculation during the first five years; and the arrangement by which purchasers may carry without burden ample protection for their families in the form of life insurance to the amount of the mortgages on the property.

MODERN FURNITURE IN HISTORIC STYLES

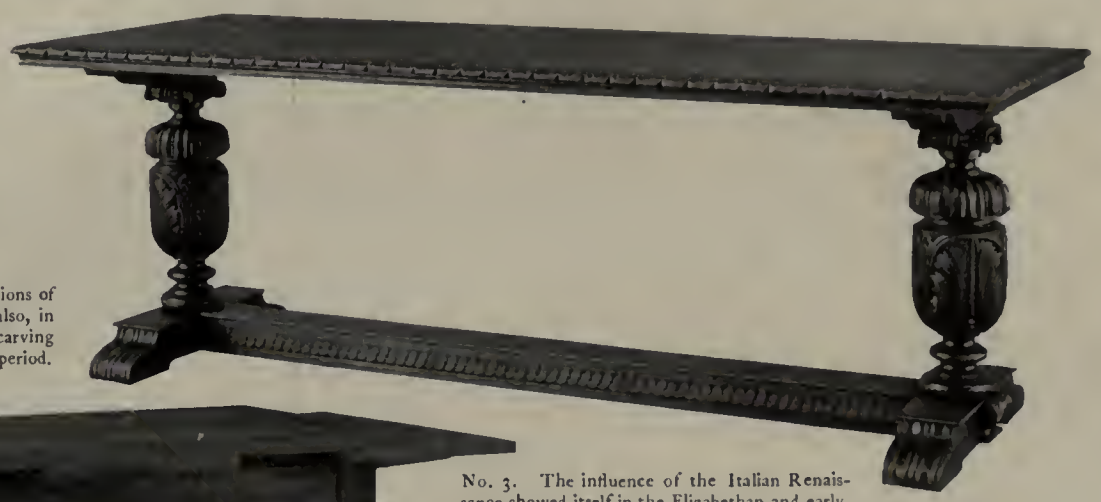
PART III. FURNITURE INSPIRED BY EARLY JACOBEAN AND CROMWELLIAN PIECES

This new department, illustrating types of Period Furniture, has been inaugurated as a feature of practical value to the architect, to appear regularly in THE ARCHITECTURAL REVIEW. *It is the intention by this means to illustrate occasional pieces of furniture of architectural value, and to keep the profession informed of furniture recently manufactured that conforms with acceptable standards of definite architectural styles. As only a selection from the best of the furniture currently manufactured by American cabinet-makers will be pictured in these pages, our readers are invited to submit written inquiries when desiring further information about any individual piece, or pieces, in which they may be interested. They may in this way obtain the names of the manufacturers, and be informed of the sizes, prices, and places where the piece illustrated can be obtained.*

Address all inquiries to Modern Furniture Editor, THE ARCHITECTURAL REVIEW, 144 *Congress Street, Boston, Mass.*

No. 1. The "almery" or "dole cupboard" and the Gothic *crédence* developed into the Jacobean "hutch," which was a cupboard on a stand. In this piece the underframing is early Jacobean, the mitered moulding and split turnings are transitional Jacobean, or Cromwellian, and the twisted leg forecasts the later Jacobean style, usually called "late Stuart" or "Carolean."

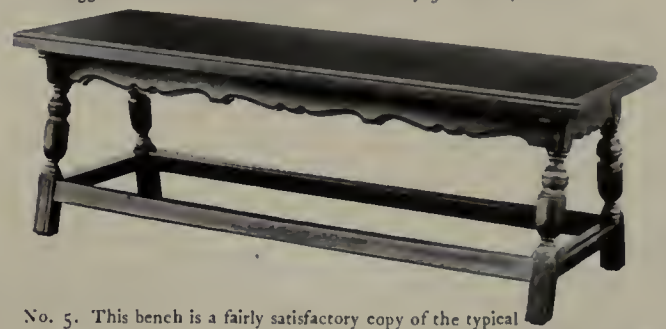
No. 2. A high stool typical of the heavy proportions of the earliest Jacobean furniture, and characteristic, also, in its carving and in the turnings. The same type of carving is seen on many refectory tables and cupboards of the period.



No. 3. The influence of the Italian Renaissance showed itself in the Elizabethan and early Jacobean tables, which had single end supports in place of four legs. This type of leg, with the Renaissance Ionic capital, was also commonly used in the four-legged tables of the Elizabethan and early Jacobean periods.

The Ionic type of capital shown in both Figures 3 and 4 indicates the influence of the Italian Renaissance and English work of this period.

No. 4. The "draw top" table was a popular Jacobean type. The length of these tables may be nearly doubled by pulling out the ends, which are supported by heavy, running brackets. These brackets are ingeniously contrived so that the draws, when pulled out, automatically become flush with the main table-top.



No. 5. This bench is a fairly satisfactory copy of the typical Jacobean bench of the sort commonly used with refectory tables. The canted legs used in this piece are not so common as vertical legs, and it suggests a survival of a Gothic trait in this particular.

No. 6. A typical Jacobean "joint-stool," such as was often used at the ends of the long dining-tables. Its name is supposed to be a descriptive one, derived from "joyned stool."

Furniture of this simple and heavily framed oak type, depending principally upon turnings for its effect, can be both inexpensively and durably made.

Nos. 7 and 8. A good, simple adaptation of the early Jacobean type of table and bench, with the profile softened to suggest the value the antique pieces obtained from long usage. The single lengthwise piece of underframing is a modern modification of the characteristic Jacobean construction which is used in the bench. As the modern chair did not begin to come into common use until Cromwell's time, the bench was the usual and appropriate seat of the period.

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AGRICULTURE is the one universal industry, covering the entire United States, where the influence of the European War has called for a *tremendous increase* in production — a production that has yet not sufficiently kept up with the world demand, until the prices now commonly asked for some of the more important agricultural products are in some cases four and five times what they were three or four years ago!

Under these conditions it is inconceivable but that the coming spring will bring the greatest expansion of agricultural industry this country has ever seen. While there is no possibility that, by mere intensification of product, the equally fertile lands of this country are likely anywhere near to equal the results obtained from the soil in Europe, — under the more efficient methods and more drastic governmental control there maintained, — yet unquestionably endeavors will here be made to increase production, while the tendency to accomplish this result by planting new land, or fields that have long lain fallow, will be even more general. In this direction expansion probably will be limited only by the inevitable scarcities of proper seed material; and of labor — skilled or unskilled!

WITH this increase of production there will be every tendency to increase and better the physical condition of existing buildings for housing farm products, so necessary to the profitable carrying on of that industry. More prosperous than he has been, in most sections of the country, — for the past four or five years, at least, — the farmer is now better able than ever before to finance such building, or rebuilding; while the inevitable need for sufficient storage-capacity to enable him to protect and hold his produce so that he can get the best return from his crop will spur him on to undertaking a total of construction work this spring that will probably surpass that undertaken by his class in any spring this country has yet seen.

While statisticians have been fond of flaunting the fact that the values of our farm crops for the year 1917, in nearly every instance, have increased in most cases to more than double, and in some instances even to treble, their average value for the preceeding five years, yet it must be recalled that a very considerable portion of this increase in value is to be attributed to the increase in *price* rather than to any actual increase in *bulk* (and, therefore, in the actual size of the crop!) obtained.

Saving only the possibility of the Government finally proving unable to patch together our outgrown and disorganized transportation system, and to control and increase the steamship tonnage connecting us with Europe, no one American industry can now look toward the future with greater certainty of assured success and profit than the farming industry of this country.

THE notable shrinkage in the demand for lumber in building construction in our cities that was witnessed by the last nine months of the year 1917 was temporarily overcome by the tremendous demand for this material occasioned by the cheap and temporary accommodations built by the Government for its army cantonments and hospital units during that same time. This same demand is likely to continue during a large part of 1918, for the cheap type of temporary clap-trap construction that the Government will undoubtedly first adopt as its highest ideal of efficiency and economy in war housing!—but this year the farming communities in our country will also undoubtedly begin to exert a demand for lumber for building construction that cannot help but make itself felt before the summer has got well under way.

Whereas the economics of war have always tended to eliminate the unessential trades and professions; to eliminate the middlemen, who produce no actual benefit to their community; to force out of business the jobbers, who interpose in distribution only to add to the cost of our necessities; and to reduce unnecessary profits in speculation in wheat, and other paper exchanges of similar products that have formerly existed to complicate and add to the expense of running our ill-organized and wasteful machine of civilization; — it will, at the same time, make more and more inevitable the guaranteed assurance of such vitally necessary industries as farming, upon which the very future life and welfare of the race, as individuals, — from the national point of view, as well as for winning the war itself, — concretely depends. National considerations as vital and important as these justify our devoting so considerable a part of one issue this spring to placing before the profession some individual instances where the architect, offered an opportunity along agricultural lines, has amply proven the possible importance of the relation he might bear toward the bettered and more efficient development of the industry of agriculture throughout this country!

It is greatly the loss of the profession — and the inhabitants of the country as a whole, as well — that this relation has not before been established and continued; and that even now it does not exist to a greater extent than is at present the case. The mere saving in labor effort to be obtained from the well planned and arranged farmhouse or farm stable group is such that, in the farming industry quite as certainly as in the manufacturing enterprise, it can oftentimes make the *entire difference* between a profit and a loss in the conduct of the business for the season — particularly in these days, when the difficulty of obtaining help is so vital a matter to the continuance and success of the whole farming industry in America.

THIS year, particularly, will it be necessary for the farmer to store a large part of his produce at its source. Existing elevators and storage warehouses will *not* be sufficient to accommodate the huge bulk of our farm product; besides which, the grave dangers of wholesale crop destruction by incendiary fires at these more central points of wholesale storage are now becoming recognized and appreciated. Hardly a day passes that does not record a fire destroying a considerable amount of the necessities of life — as gathered together for shipment, either by land or by sea.

So far as these losses are caused upon the ocean itself, it is hardly possible yet to do more to prevent them than is already being done, or is under way. So considerable a proportion of the destruction on land, however, has occurred during the last two years,— or slightly more,— under conditions so different from previous happenings, that the conclusion must be accepted that some definite and sinister method exists behind this destruction. Last year no less than sixty-five important fires of this suspiciously providential character occurred; and last year records of total fire losses mounted above all previous years; with the single exception of 1906, the year of the San Francisco earthquake and conflagration. The losses of 1916 exceeded by thirty millions the losses of 1915. 1917 saw a further increase, an *additional* thirty million dollars loss over the year before, reaching the grand total of two hundred and thirty million dollars! This ominous increase of incendiarism — so far as it applies to farm products, at least — can be partly minimized by storing grain at its individual sources until ready for shipment; when a considerable proportion of the loss that the *whole world* can so little afford to suffer at this time might be avoided!

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Vol. VI, No. 4 April, 1918

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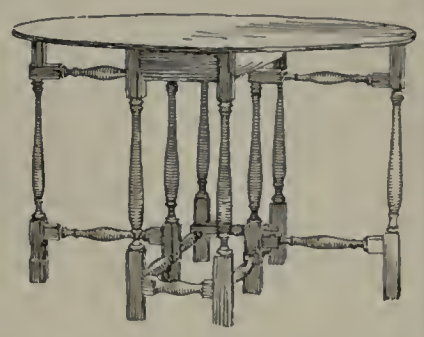

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The Architect and Industrial Housing

NO MORE attractive field opens before the architect, at the present time, than that of industrial housing. To provide livable homes for American working-men has become a national problem which offers to the profession a rare opportunity for creative work. European countries have preceded us along these lines and furnish many excellent examples, which we must emulate, of how the work should be done.

In building, as well as in all other human activities, it lies in the nature of civilization to rise above the mere brute necessities of life. The human shelter must be more than a protection from the elements, it must take on aesthetic value, attractiveness and beauty to the eye, both in itself and its setting.

Modern manufacturers are beginning to recognize the necessity — indeed, the investment value — of aesthetic elements in the construction and arrangement not only of their factory buildings but of the employees' housing.

And the community at large is more and more waking to the subtle and powerful educative influence of better homes and better surroundings. Balzac, in "The Peasants," remarks with justice that a man's morale improves with his parlor furniture. The man feels a deeper sense of satisfaction, acquires self-respect, ambition, and becomes a better worker, neighbor, citizen.

The chief obstacle in the way of such individual and community improvement is not unwillingness, though much of that has still to be overcome, but ignorance and incapacity — lack of knowledge and lack of skill.

There is just one profession whose sole business is to supply that knowledge and that skill, — architecture. Especially at this time, when the nation's need demands the proper housing of its workers, a great task and a great opportunity are laid on the architect.

It would be ignominious for a nation as rich and potent as ours to permit, at this time, insecure, unsafe, unattractive and sloppy construction in the homes of its working-people. And now is a rare time to start right, in building up industrial communities that are worthy of a growing, progressive and modern democracy such as ours.

Mr. Architect, here is a call to the flag which may not be so dramatic, but which, in promised service to our country, will far outlast the passing war. Wars may come and go, but, in a sense, your work, well done, goes on forever.

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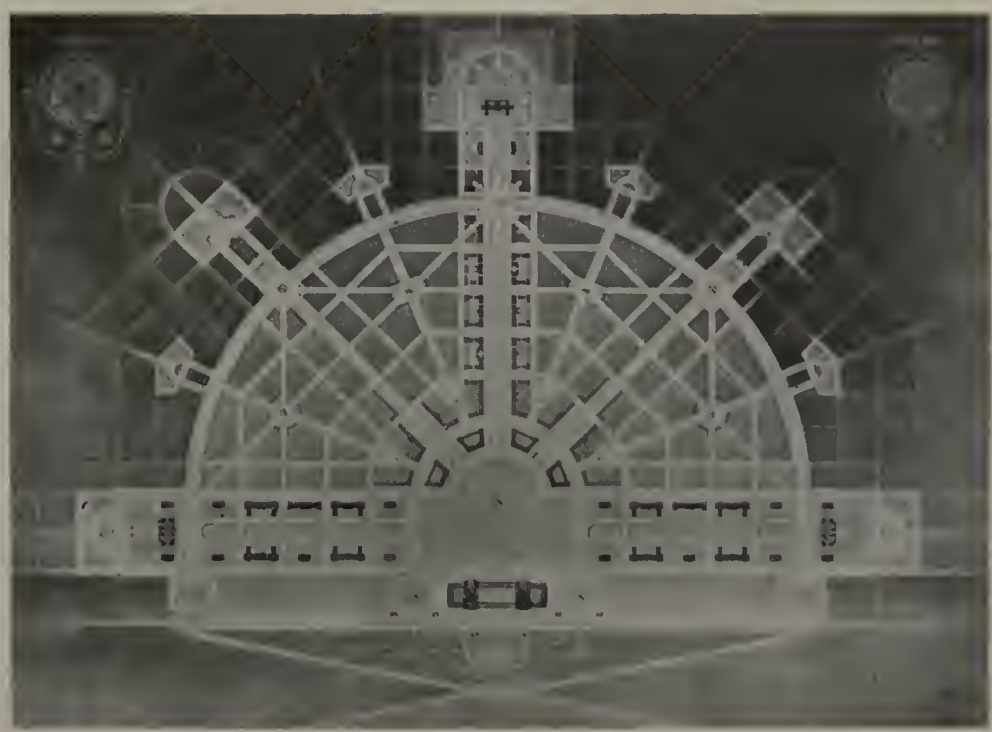
The Architectural Review

Volume VI (Old Series, Vol. XXIII) April, 1918 Number 4

A Proposed New Summer Capital and National Center for the United States of America

Described by Frank Chouteau Brown

WHATEVER truth may reside in the picture given in current presentations of Mr. George Arliss' play of "Hamilton" as to the happenstance manner in which Washington was selected as the site for the National Capital, — as a mere political compromise between those influential members of the original Government who fought for its location in the New England States against those who fought for a position in the South, — the fact remains that Washington has not proved in all ways to be a comfortable site for the year-round progress of Government work. In these days it requires neither a physician nor a psychologist to understand that better and more effective progress could be made by the legislative body representing the United States of America, under conditions of weather and temperature better adapted to maintain body and mind at a normal degree of efficiency, than is possible in the heat-burdened atmosphere of Washington during the summer months. And somehow or other, despite the best intentions of those most intimately concerned, events important in the progress of civilization, in the history of the United States, and in the politics of the world often occur at awkward periods, that, frequently enough, find the occupants of the Embassies, of the White House, and of our Halls of Government scattered to the four directions of the country and the forty-eight States and Territories from which they originally came.



Plan of Proposed New Summer Capital and National Center
J. E. R. Carpenter, Architect

Within recent years the President's summer residence has varied from as beautiful and restful — if inaccessible — a location as Cornish, N. H., on the one hand, to the sandy wastes of New Jersey upon the other. And if one's physical environment is as important as psychologists claim, the change in the Presidential attitude from peace to war can be regarded as an inevitable result of removing from the restful dignity and tranquillity of the summer "White House" at Cornish to the disturbed and discordant architectural summer surroundings found on the more accessible New Jersey shore. If the only result that might follow the suggested provision of a summer Capital would be to remove the President permanently from such an apotheosis of American bad taste in art and architecture, that would alone be sufficient to repay the Nation the labor, pains, and expense proposed! Also, the long sessions of Congress, which have occurred frequently, from time to time, and have now come to be almost a regular part of the legislative work of these strenuous war years, indicate even a greater necessity for transferring Congress, as well as the President, to a climate better adapted for effective contemplation of the necessities of war and peace than is Washington during the long, hot summer months of the year.

Once granting the need to provide proper surroundings to guarantee the continuance of the Government of the United States the whole year around, — a provision, it should be recalled, more especially needful in the case of a Republic than in a country governed, in more imperialistic fashion, by a single ruler — it should further be borne in mind that at present the utterly irresistible pressure of world events is working twenty-four hours the day (and accomplishing its utmost) to spoil the one-time beautiful plan of Washington — originally laid out upon the grandest and most far-sighted lines — by erecting a host of "temporary" structures, from the burden of which the National Capital will probably not escape for human generations to come!

Under any normal considerations there would appear to be no logical objection to preparing, on some ideal site, a group of buildings to which it would be possible to transfer all the Governmental agencies necessary to be continued during the five or six summer months, along with the Embassies and the President, in such a way that no iota of the complicated mechanism of Government need be interfered with or put out of gear. For the further definite consideration of such a scheme, it only remains necessary to find, first, an available site providing the necessary physical and climatic conditions; and second, to lay out an acceptable and feasible scheme which would provide for the continued future development of such a com-

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munity along lines to guarantee final results as much more beautiful than the development at Washington as could be expected from the inception of a complete plan at so late a date that we should now know better how to conserve its original beauty for all future time.

The Importance of the Site

As to selecting a site; it is unnecessary to waste either time or argument in establishing that point, as, unquestionably, representatives of every State in the Union would instantly agree to provide within the confines of their own section one if not a dozen sites equal to every possible ideal demanded of nature or of man for such a city as is here proposed! Without venturing, therefore, to suggest or claim that the ideal site has yet been found, for the purpose of illustrating the physical possibilities and advantages of such a scheme the author of the design illustrated herewith has nevertheless ventured to pick out *one* such possible site, in this case in the State of West Virginia, where, on a plateau of 3,700 feet elevation, all merits of climate, scenic surroundings, and beauty, accessibility to other natural advantages, such as the near origin of water-power and coal-supplies, would combine to make one of the many possible ideal locations for such a Summer Capital and National Center as is here tentatively proposed and illustrated for the consideration of the country as a whole.

General View across Gardens of the Tuileries, Paris, showing the dignified frontage of buildings on a formal garden similar to the effect of the structures proposed along the edge of the mountain terrace

This particular site in the mountains is, furthermore, within easy distance from the present National Capital at Washington, — approximately 200 miles. The region also provides many mineral springs, thus suggesting a possible development along the lines of a fashionable European watering-place, such as Carlsbad or Marienbad, both subsidized by the Government in Austria; or Bad Nauheim and Wiesbaden, Kissingen, Baden Baden, and others, which are similarly supported in Germany. Aix-les-Bains is such another famous resort in France — likely to become better known to Americans through its present employment as the officially established recreation center for the American Army in France; and the city of Bath in England is another world-familiar site, created by just such another demand for a Court resort for use in the off-season of the year. The result was a city that, in its recreative resources and physical development, expresses the nearest approach to the ideal that might be held in mind for the development of such a Summer Capital as is here proposed for America.

An All-the-Year-Round Resort

The emphasis placed upon these well-known European Baths is intentional, because it serves to answer immediately the single logical objection to establishing such a Capital in this country, for summer use alone, as being a waste of efficient effort, because it would be as easily possible to found a city available for use the year around! Such a criticism might be true; but on the other hand there is no intention to suggest a change of the National Capital from Washington, where it is already well established by generations of endeavor, for the major portion of the year. Yet the latent facilities in the particular site described would guarantee the use of such a city as is here proposed throughout the entire twelve months of the year, as, when not in use as the seat of Government for the summer, it would be equally well adapted for the purposes of a winter bath and convention resort, thus keeping its hotels and public buildings occupied and in use the year around, with the mountains providing some of the same outdoor sports as American travelers now go to Switzerland to find.

Various endeavors have been made to provide in Washington the convention halls necessary to make that city even more utilized as a National Convention Center than it is at present; but objections to this are obvious, particularly in a period when the sessions of Congress serve already to flood the available entertainment facilities to a point where it is impossible to extend them any further with comfort. And, because the period when it would be available for convention purposes would invariably coincide with the period when the Government was in session, such a situation could not be entirely obviated in Washington. With the location proposed for a new Summer Capital, however, the two centers could alternate, with every resulting advantage possible to all those concerned!

A Monument to Democracy

The one *great* distinction that would exist to make the proposed Summer Capital different from all European cities mentioned would lie in the fact that this newly created American resort would be recognized by all the world as an ideal Center of Democracy, developed so beautifully, by utilizing the best facilities that nature had herself provided; by the lay-out of parks and national monuments; by constructing resort hotels on the scale and the merits of those found in the best European recreation centers, as to create here a truly *national* monument to the Triumph and Preservation of Democracy — especially if its inauguration could be associated in some definite way with the conclusion of the present war and the establishment of an enduring world peace! Certainly, no site could better and more deservedly serve as a gathering-place for representatives of the world nations to meet and establish national bounds of future peace and prosperity than the site of such a new Capital and National Center. That result alone would serve to consecrate the city and make it a famous place of pilgrimage for all time. It

Place Vendôme, Paris, showing treatment similar to that contemplated for the squares at intersections of the diagonal streets

would lay the foundations for its becoming an enduring monument of world fame, a monument of which the whole city would itself become the ideal site and full exponent. Such peace meetings as this, though of less world importance, *have* previously been held in this country, under difficulties that seriously reacted on the concentration and comfort of those concerned. Yet, if begun at that time, the mechanical plant and structures provided by such a National Center would make an ideal location for these official conferences at any and all times of the year; and such an opportunity for inaugurating it as a great future center for recreative sports and travel the year around should be seized upon to associate the United States of America with such an historic and appropriate world event as it would seem should, in all probability, naturally occur upon these shores.

View across the Piazza del Popolo, Rome, showing possible circular development of diagonal street intersection

Explanation of the Plan

The development shown in the accompanying drawings was worked out with the idea of picturing the wonderful possibilities of a new National Capital, placed upon one possible site, to which site the plan of the city herewith adopted would seem to be ideally fitted. It is, of course, not proposed that the details of the plan arrangement here recommended should be arbitrarily adopted, if such a scheme goes through, and applied to any *other* site! Such action would obviously be both impractical and undesirable. The details of the arrangement of the city would, of course, always have to be settled to suit that site finally selected; but in so far as the details of its organization and control are concerned, as they are recommended later in this article, they should be capable of adoption almost intact for application to whatever site might later recommend itself as being best suited to the multiplex character of the type of city that has here been advocated and devised.

Given a natural plateau of the extent called for by this plan, with its outlook across the valley to the mountains beyond, the scheme projected for this site would seem to be almost ideally adapted for the purposes both of national use and all-year-around development. The opportunities are both stately and monumental on the one hand, and practical and convenient on the other. It offers every possible site for buildings of public importance, with convenience of access from adjacent or distant locations within the Capital area.

To indicate the scale of the proposed development, it may be said that the distance from the Legislative Building to the Summer White House is about a mile and a quarter; the radius of the circular boulevard about three quarters of a mile; and the distance between the buildings ending the vista at either end of the terrace lagoon about a mile and three quarters.

Particular attention is drawn to the convenience of intercommunication in the plan. Not only does the circumferential avenue give a means of outer cross communication, but the imposition of the rectangular plan inside the semicircle, with the diagonal criss-crossing of streets at right angles, based on the two principal diagonal avenues, introduces an unusual element, offering direct lines of cross communication in almost every direction and between any points of possible diagonal relation that it could conceivably be desired to reach. Such an arrangement serves the convenience of the dwellers in, or visitors to, the city, and also provides many smaller squares or park spaces of various geometrical shapes, including a number of the interesting "round points" in which the city of Paris, for instance, abounds; along with those diagonal intersections of streets of which we already possess many instances in Washington itself.

The Governmental Center

Roughly, the idea would be that, in the eventual development of the city, the semicircular outer boulevard would practically circumscribe the more important public section, enclosing the National City, while providing ample important sites for Embassies, public buildings, hotels, apartment houses, clubs, theaters, etc., with the Legislative Building practically at the center of the circumferential radius of this main boulevard, so placed that it would serve to end, while yet not wholly to interrupt, the vistas down most of the radial avenues.

Inasmuch as the eventual development of the city would probably bring the residential portions, with the suburban streets, villas, etc., in the section outside of the circular boulevard, the principal sites for churches, theaters, opera-house, etc., have been located as facing upon this semicircular avenue, just outside its perimeter, and therefore in more nearly adjacent relation to the principal residential districts, to which they would serve as natural *foci* of interest.

In zoning the city the most appropriate sites for the Embassies and Legations would be along the margin of the main avenue, terminating at its upper end in the Summer White House, with the more important buildings located at the intersections of the principal cross avenues. Other public buildings, hotels, and clubs could be located either on this street or along the circular boulevard; while still other important semipublic structures should be on the two sides of the lagoon, extending along the edge of the mountain terrace. Beyond the semicircular boulevard, which marks practically the edge of the level plateau, the streets are of a more informal arrangement, such as better suit the varied contour of the land and its intended development for residential suburbs.

View along Rue Royale, toward the Madeleine, Paris, showing typical treatment of monumental street, with church closing end of the vista

Legislative Halls and Plateau Terrace

The sites overlooking the valley and the hills beyond are utilized to the utmost by placing the main façades of the

View from the Terrace, Villa D'Este, Tivoli, showing similar aspect to that which would be obtained from the brow of the mountain terraces, overlooking the valley

Legislative Buildings along the edge of the bluff, which, with the main lagoon in the center, and the canals crossed by bridges and bordered by the principal hotels and public buildings on each side, runs in a generally northeasterly and southwesterly direction, with the railroad station terminating the vista on the northeastern end and the principal building for the baths at the other. The Legislative Buildings provide a large central forum,— peculiarly adaptable to impressive ceremonials, such as functions connected with the arrival or departure of important official guests, — enclosed by double colonnades, located in the center of the Legislative Halls, with Halls for the Senate and House of Representatives at either end, backed in each case by another courtyard of ample size, surrounded by the necessary attendant legislative offices. The site for this structure is in the center of the long valley elevation, beyond the buildings bordering the canals, directly overlooking the open-air stadium for international sports or military reviews, and two classical theaters for the presentation of open-air spectacles of dramatic character. This façade of the Capital was intended to give the city as unique an outlook in this country as the view from the Public Gardens overlooking the Umbrian Valley at Perugia.

Besides the long ascending ramps, making it possible to journey by easy gradients to and from the valley below, the wooded hillside would be broken by paths; and the public would also be served by funicular railways at either end of the public terraces. This city frontage on prospect of valley and mountain is practically unexampled in America, and would help make it a chosen spot for pilgrimage in this country, as we now are forced to go to Europe to find similar beauties to admire.

The open-air theaters, stadium, and ramps make provision for winter and summer sports; for national or international athletic contests, as well as the Olympic games; and the country immediately surrounding the city would provide golf enthusiasts with varied courses of different types and difficulties, for permanent residents or hotel visitors the year around.

The City a Permanent Industrial and Artistic Exhibition

While the city would not be developed especially along commercial or industrial lines, all functions necessary to the health and living of the inhabitants would have appropriate and central locations provided in properly regulated zoning districts, to the convenient application of which this plan is obviously well adapted. The necessary industrial sections are planned for the inner portions of down-town blocks — when they are needed in the center of the city — or in certain suburban radial districts, where they can be in immediate conjunction with Garden Suburbs, placing the homes of the working-men immediately adjacent to their work — which experience abroad has disclosed as the ideal solution, tending rather toward the segregation of industrial units than to their clustering in larger groups.

A big economical problem, requiring a beautiful, practical, and efficient solution, once visualized, should appeal to all classes of Americans as the highest product possible of new-world civilization. Besides the city's practical and commercial interest, the beauty of its environment would be further supplemented by those artistic and musical advantages which would make it a center of the arts and literature, supplying incidental potential educational value to those seeking merely for amusement and recreation. Its museums would provide a national home for *all* the arts — including the drama — as well as a permanent exhibition of American products and industries, displayed in popular form, that would, wherever possible, illustrate actual processes of manufacture, in progress.

Problem of Government and Control

So far as the physical control and government of this city is concerned, the plan in the mind of the originator would be based upon the composite of ideas, deduced from the best and most successful experiments in advanced city government and control the world around. The architectural development would be wholly under the control of a representative Art Commission, given *full* legislative power, and combining representatives of all the allied arts. This Commission would not only act in a critical capacity, but it would also originate and direct the physical development of the municipality down to the minutest and apparently least important detail. It would determine and administer those rules of control, which in Paris, Berlin, and London proved most efficacious and successful; even to working out the designs of the lamp-posts, letter-boxes, street-curbing, property-markers, etc., most appropriate to their purpose and the city.

Certain sections — most certainly the monumental portions — would best be developed in a consistent style of architecture, combining the best of what has been inherited from historical American models, such as Monticello and Mt. Vernon, in one direction; the University of Virginia and Independence Hall, the old New York City Hall and our Capitol Building, in another; so the resulting buildings would harmoniously blend the Georgian Architecture of England, with a definite infusion — where appropriate to the larger, more monumental character of the public buildings — of Italian Renaissance motives. This side of the city's development should be absolutely controlled by an Advisory Board of Architects, establishing general requirements in common, and then delegating particular structures to individual architects, in exactly the way the World's Fair at Chicago was produced.

With such an opportunity a permanent realization of the vision of classic beauty disclosed in the "White City" at Chicago could again be produced, this time to endure to establish a standard of architectural taste for future generations of Americans. To make such a result representative of the country as a whole would require the united efforts of the best talent available in every profession, — architectural, engineering, medical, or whatever,— all brought to bear upon a truly national problem.

The final details of its form of government should be left to a commission of statesmen, city planners, and experts, to determine the most ideally best and practical form, probably employing a civic manager, under a small elective commission. The best minds and experience of the country could thus be brought to bear upon the representative problems of city government, so that finally a model arrangement of interlocking and mutually related departments would result, fully representative of our democratic ideals, in a practical working standard, a model for all American cities to follow and uphold as a civic ideal for the American city of today as well as the "Capital of Tomorrow."

The Financial Basis

The practical financial side needs to be emphasized. So far as the author of the plan has worked out these details of his scheme, it requires an initial Government appropriation of $50,000,000 — exactly the sum appropriated for each of the two Government housing developments now being undertaken, and about equal to the Government appropriations for previous World's Fairs in this country. At Chicago this item was $10,000,000, and $21,000,000 was spent. This appropriation would cover the original property cost including, at a minimum, land

FROM THE RAILROAD YARDS

OPEN COURT OF THE BATH

A DESIGN FOR A SUMMER CAPITAL AND NATIONAL CENTER

J. E. R. CARPENTER, ARCHITECT

equivalent to ten miles square, which would, within a twenty-five year period, by the increased real-estate values created by the development of the city, return, on land marketed to home builders, hotel organizations, and for other purposes, easily $1,000,000,000. The remainder would be utilized for the land development necessary for the initial Governmental structures. This would include the necessary lay-out and construction of streets, parks, sewers, public utilities, of electricity and gas, and such other requirements as would be needed for a considerable time.

Of the 100 square miles, or 64,000 acres, thus taken over, leaving ample amounts for streets, parks, public sites, etc., there would remain at least 1,500,000,000 square feet of land which, if sold at an increasing value from 50 cents to $10 the foot, over a period of twenty-five to fifty years, would, at the low average of $1 the square foot, equal $1,500,000,000. Allowing all possible recoupment on the original investment, maintenance and development charges (also largely offset by interest), this would entirely construct the city upon a permanently self-supporting basis.

The Process of Development

The land being originally owned and controlled by the Government, proper enforcing legislation would prevent its use or building up in any way that would conflict with the scheme of the whole city, and return to the inhabitants all unearned increment in values, developed by their common ownership. The proceeds from land sales would provide further civic improvements, monuments, public buildings, parks, streets, and all necessary public utilities; even such coöperative economics as supplying heat (as well as light) from central plants, altogether eliminating dirt and smoke. The coal would be more cheaply utilized for electrical power at the mine mouth; transmitted by high-tension wires; supplying the city through tunnels built in advance of street construction, thus saving huge annual wastes of tearing up and replacing street surfaces. The large values communistically created, and the improvements therefrom obtained, would obviate the necessity for high taxes; so that men of wealth and position would be inclined to make the city their permanent home.

All advantages feasible through coöperative organization would be applied to the city to the fullest possible extent. Two large public markets are proposed; schools are located in the suburbs or inside central city blocks for quiet, economy, and safety — taking their place in the uniform treatment. A large school and community recreation center will be utilized by the Government Departments of Education as a model group — illustrating the latest educational methods for the inspection of teachers and visitors from all parts of the country.

This city would draw even the European traveler to this country for those advantages, and other newer ones, such as are now found only in Paris, Rome, or London. American tourists have annually spent $350,000,000 abroad,— Maine alone derives $40,000,000 a year from tourist travel,— and this money is now, and will after the war be, in search of opportunities for expenditure — such as the city thus outlined would at once provide!

How Can This Ideal Be Realized

What, then, are the preliminary steps necessary to realize this scheme? Merely these: First, a Congressional Commission, appointed to investigate the feasibility of the plan, recommend a site, and submit a detailed report. Second, the official Government adoption of the site recommended, and then, the proper determination of its physical development and the appointment of proper representative commissions of control,— when the entire city, along some such lines as portrayed or suggested on these pages, could be begun,— guaranteed almost immediately to become a self-supporting, self-developing, self-perpetuating American city, concentrating and centralizing the best of everything developed in this country and in Europe! Then every American might, through these visible results, realize that he belonged to, and was part of, a civilization and a country of which he had good reason to be worthily proud!

View along Circumferential Avenue, looking towards Principal Axial Street
J. E. R. Carpenter, Architect

ON THE PLAZA

A DESIGN FOR A SUMMER CAPITAL AND NATIONAL CENTER

J. E. R. CARPENTER, ARCHITECT

STADIUM

A DESIGN FOR A SUMMER CAPITAL AND NATIONAL CENTER

J. E. R. CARPENTER, ARCHITECT

VOL. V

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A DESIGN FOR A SUMMER CAPITAL AND NATIONAL CENTER

J. E. R. CARPENTER, ARCHITECT

VIEW OF PRESIDENT'S HOUSE AND TERMINAL PLAZA

A DESIGN FOR A SUMMER CAPITAL AND NATIONAL CENTER

J. E. R. CARPENTER, ARCHITECT

The New Minneapolis Plan

By Edward H. Bennett

The report on the future development of Minneapolis, Minn., has just been printed, and we are publishing an authoritative presentation of the scheme recommended by Mr. Bennett and his associates, with a selection of the illustrative studies made to accompany that report. The city itself, located at the head of navigation on the Mississippi River, partly surrounded by a related chain of attractive lakes, and built up from the water-power provided by St. Anthony Falls, with a park system already famous, offers an inspiring opportunity — unusual even in North America — for such study and report.

In its final form this report deals rather more with the city's physical and visual aspects than with those many practical and utilitarian problems which its position as a commercial center, at the gateway of the great Northwest, would seem to justify.

THE Minneapolis plan was prepared under the direction of the Civic Commission of Minneapolis, consisting of Russell M. Bennett, Elbert L. Carpenter, Frederic W. Clifford, John DeLaittre, Henry F. Douglas, John Walquist, William H. Dunwoody, Edward C. Gale, Lewis S. Gillette, Jacob D. Holtzermann, and Martin B. Koon. Originally a survey and preliminary plan were made, occupying about one year's time; and then, after consideration had been given to the proposals, the work on the final plans was undertaken.

The Commission held frequent meetings at which these progressive plans and suggestions were presented and earnestly discussed, the deepest interest in the problems of Minneapolis being taken by the whole Commission, on whom the entire cost of the preparation of the plan and its publication devolved. The fine spirit pervading the citizens of Minneapolis, as already reflected in the actual accomplishment of public work, naturally culminated in the preparation of a plan sufficiently comprehensive to guide the growth of the coming great metropolis of the Northwest; and such quality and soundness as the plan may have is owing in a very great degree to the keen interest of the Plan Commission and its high ideals in regard to the work in hand.

The accomplishments of Minneapolis, in its magnificent chain of existing parks, its public monuments, such as the well-placed Cathedral and the Museum of Fine Arts, are all indications of the spirit animating this city. So also is the creation and maintenance of the Minneapolis Symphony Orchestra. The fine average quality of the predominant individual homes, and the development of the very distinctive industrial district and central clearing yards are also significant.

The plans for Minneapolis, from the very start, have paid special attention to the matter of expansion, both of the business district and of the entire city; to the influence of one on the other, and to the creation of conditions which would guarantee along natural lines a clean-cut division between the three great factors in modern city growth: residence, industry, and business. Coupled with this, an exhaustive study of the circulation, of the railroad situation, of the parks, and in particular of the Mississippi River, has been made.

General Bird's-Eye View of Center of City

Showing Station Plaza and Gateway Park, at the intersection of Nicollet and Hennepin Avenues, in the immediate foreground; Court House Square in the middle distance; and the proposed development of the new Civic Center and Plaza on the axis of Sixth Avenue, above

In what follows I quote frequently from the final report, which has been so admirably prepared by Mr. Andrew Wright Crawford, of Philadelphia.

"Minneapolis is the commercial and officially designated financial capital of an empire greater in area than Great Britain, Germany, Belgium, Holland, Denmark, and Switzerland combined. That dominion, defined under the Federal Reserve Act of Congress, consists of the northern tier of the States of the United States from the Great Lakes to the Rockies. The undesignated domain of this city is yet vaster, and includes the greater part of Western-Central Canada and Western Canada as well. This is the territory upon which Minneapolis will draw in larger and larger measure. The volume of its new citizens, already coming from many sources, will be augmented by a constantly increasing number from this tributary empire. They will add to its population and resources, but their coming will necessitate the rapid expansion of the physical city of Minneapolis. That expansion will be either healthy or unhealthy, adequate or inadequate, preconceived or haphazard.

"A plan is here presented to prepare Minneapolis for its inevitable growth. This city is bound to be great in size. It must be great in character. Minneapolis is no mean city today. It is a city of real accomplishment. Its system of water parks, linked by waterways, leads America. That means it leads the world. Europeans admit that in their coördinated park systems American cities have no competitors abroad. Minneapolis is now a large city. The greater city that the future is so surely and so swiftly bringing must be a more economic, a more convenient, a happier, and a more generally beautiful city."

The area required for a population of one and one-half millions will be from 125 to 150 square miles. This area represents an approximate radius of seven miles. The

larger portion of this area of future development is shown existing to the west and south of the present city, as the growth of the city has, in the past, been southerly and southwesterly as to both residential and business areas.

"To the southwest, toward the lakes and the broken country surrounding them, will be the trend of the more expensive residential areas and the higher residential values; but to the south will drift the greater numbers. This southern residential section will spread not only westward but eastward, toward the Mississippi, and there will meet the westward approach of the residential section of Saint Paul. The great development of the south and west will be accompanied by corresponding growth, on the north, of an industrial population. The movement of the bulk of the population in a southwesterly direction will leave a clear field on the east and northeast for the development of the warehouse and industrial districts, and conditions are favorable for continued expansion of this industrial district and the establishment on the east side of the river of a general transfer and clearing yard for the railroads, of ample size and common to both cities."

The future growth of Minneapolis will mean the occupation, in a more intense degree, of the territory now built; it will mean the spreading of the city limits; the extension in every manner and direction of all business and public utilities; and the study of the plan based on this growth involves the arterial system and general distribution of the various elements of city life, its manufactures and general industries, all the wholesale and retail trades, the financial and residential districts; also its railroad questions, both freight and passenger.

Certain modifications of existing railway lines are designed to facilitate the separation of the factors already outlined, including a further expansion and development of the freight clearing yards, with a view to concentrating on the east bank of the Mississippi River as much as possible of the bulk of industrial growth of heavy industry in this district, common to both Minneapolis and to Saint Paul; a very unusual opportunity.

Reference to the general plan shows the situation of Minneapolis with regard to the surrounding country; the approximate line of its future growth to accommodate one and one-half million people; its relation to Saint Paul as a dual city and the backbone of the circulatory system, as existing and proposed.

The dominant features in the plan — around which the balance of the plan is woven — are two cross axes; the development of the river front; the creation of the civic center at the intersection of the axes; and the further development of a transportation center at a point already established on the River. An additional factor is the circumference street, or ring street, enclosing to a great extent the business center. These factors of street arrangement grow naturally from existing conditions, and are very largely composed of extensions of existing streets or their widenings.

In the center of the city the streets, mostly at right angles, run in an oblique direction to a north and south line, while surrounding this center they are normal to the north and south. A peculiar opportunity is thus afforded to create an enclosing circuit street, enclosing only in one sense, its function being primarily that of facilitation of traffic around this center, already showing some signs of congestion.

General Plan, Showing Business Center, Park System, and Principal New Street Extensions

Perhaps most important among these suggestions is the new northeast and southwest main axis, the Sixth Avenue artery, which presents the opportunity, first, of intersection with existing avenues.

"At its intersection with Eighth Street a superb Civic Plaza, extending from Eighth Street to Tenth Street, is proposed. A second equal opportunity for a great art center is offered by the Art Museum and its surrounding park. A third, equal in possibilities to the Place de l'Etoile of Paris, the location of the Arc de Triomphe, is the circular intersection beyond, planned for the common focus of Sixth Avenue, Lyndale Avenue, and 36th Street. A fourth, entirely different from any of the others, is the water-gate at Lake Harriet. Northeastwardly from the Civic Plaza, the portals at each end of the bridge across the River might become unsurpassed City Gates, making the fifth and sixth points of unusual interest, and leading to the seventh, — another Place de l'Etoile, — at the intersection of Sixth Avenue, Divi-

View of Proposed Civic Plaza, Looking West from Eighth Street Along Sixth Avenue

Showing the conventional Beaux-Arts architectural expression generally adopted for the buildings in the two public structures in foreground, with others, beyond the Public Gardens, in distance

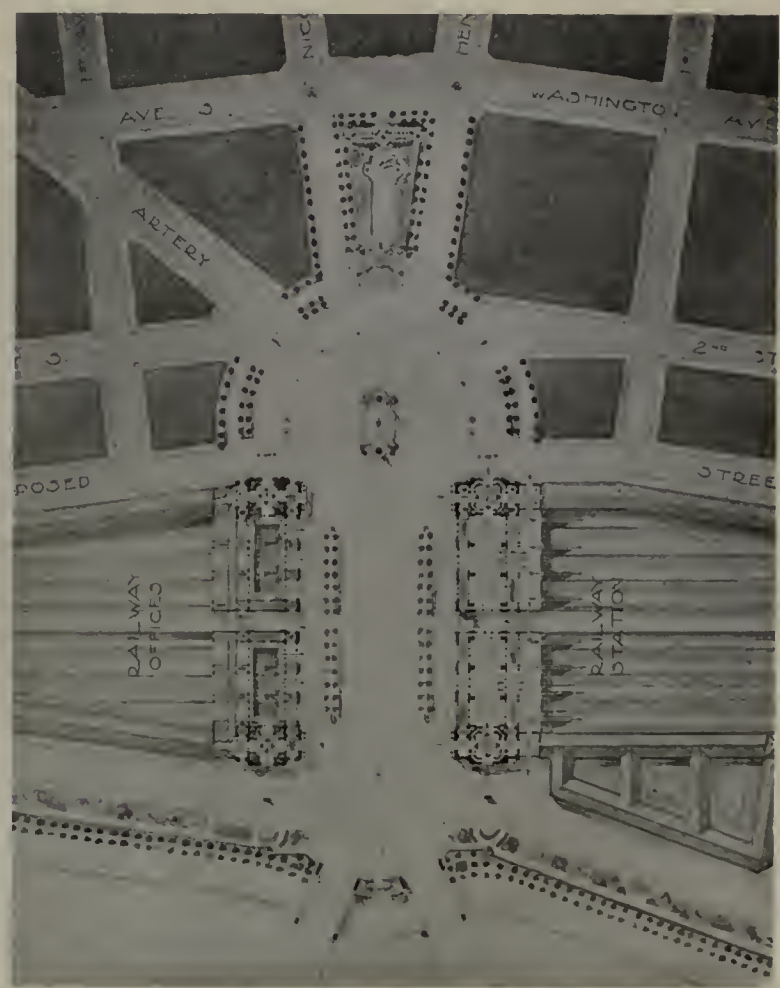
sion Street, and Harrison Street. A short but essential extension of Park Avenue will link with this series the Administrative Group at the City Hall and the Transportation Center at Gateway Park.

"If a million persons live in the area tapped by this diagonal thoroughfare, — and the population will ultimately be greater than that figure, — and each individual loses an average of ten minutes a day traveling along two sides of the present triangular street system, or one hour a week, and only one fifth of them enters the city's center daily, it means a loss of a fifth of a million hours per week, — over 10,000,000 hours per year. Capitalized at forty cents per hour, the wage of an ordinarily skilled laborer, this means that, if the present gridiron system of streets is not broken up, there would be an annual loss to future Minneapolitans of $4,000,000.

"The Sixth Avenue Extension will prevent this loss. It will become a feeder and an outlet for as many as fifty streets now without adequate connections with a principal thoroughfare;

Plan of Proposed New Civic Plaza, at Intersection of Eighth St. and Sixth Ave.

Showing Public Gardens and future locations for new public and community buildings



Proposed Development of Station Plaza, at Nicollet and Hennepin Aves.

One of the four station units has already been constructed by the Great Northern Railroad

and it will intersect all of the streets comprised in the business section south of the River. It will be a short cut for all time for all the population of Southwest Minneapolis, both urban and suburban.

"A portion of the Sixth Avenue Extension will run through what is called, in other cities, 'a blighted district,' — in the financial sense, — referring to a special area where values of property have remained stationary or have actually decreased. These blights are due to the extension of transit facilities into new territory, the tide of population and of improvement leaving older districts behind; or to a former speculative inflation of values. In the region between Seventh Street and the Art Museum whole blocks have actually lost more than fifty per cent of their value, with a consequent direct loss in the city's income from taxation."

Proposed Development of River Front at City End of the New Sixth Avenue Bridge
Showing proposed decorative treatment of new structures connecting existing flour mills and City Gate

Intersecting this is the other main axis, the Eighth Street artery, which, like Sixth Avenue, when extended, couples naturally with the great highways running out into the surrounding country. Together they constitute a recognition of the principle that the main arteries of the city coincide almost invariably with the great highways of the country — and at their intersection the Civic Center is proposed.

Other important street extensions are recommended to open up new territory, provide short distance connections from one district to another, and unite the whole city on a coördinate system. If these developments are executed, the pulsations of the city's traffic to and from the center will be easy and harmonious.

At the heart of the system a municipal group is planned. Its outlines were evolved, after some searching, from the intersection of the main streets. Its location is in advance of the expansion to the southwest of the business center. It lies where property values are still low, and its proper treatment demands that the public space be framed with controlled architecture, providing expansion to the rear of the buildings framing the space.

Other centers are also indicated. Of these the two next in importance are the Railway Center, at old Gateway Park, and the Arts and Letters Center, around the square where the new Museum, by McKim, Mead & White, is located. Both suburban and interurban transportation are dealt with in the report, as is also the relation of homes to the transportation systems, and the all important question of housing. This great subject is dealt with in its relation to City Planning in its broader phases.

"The big, broad effect of City Planning on housing is in its control of transportation, whether by the streets themselves or varied transportation services which depend on the street system. The spread of the population depends chiefly upon the convenience of the general transportation system. When the time comes for the construction of rapid-transit lines, the existing street system may be a great hindrance or a great aid in the creation of a satisfactory service.

"Minneapolis proposes that the American ideal that every workman own his home shall always be possible in this city. This can only be possible as long as the workman can live in a region where the land is not too dear for him to buy and build, or to buy where property is already built. If only one undeveloped area at a time is made available by a transportation system, this will not follow. Competing areas of undeveloped land must continually be brought into reasonable 'time-distances' of the center of cities; otherwise an unnecessary crowding of the population on land will result, with all the accompanying evils of congestion."

Minneapolis has three industrial districts, — two on the west side of the River, more especially light industry and wholesale, and a more important one, of heavy industry, on the east side. The latter is common to Minneapolis and Saint Paul, and is adjacent to the Inter-City Transfer Yard and near the focus of the railway lines in the Midway District. In Minneapolis its extension should be to the north, both as concerns topography and accessibility, also as to prevalent winds.

Coöperation is the keynote of such developments, and economic conditions of the future will force their adoption; if, indeed, the present control by the Federal Government for war purposes does not pave the way for vast changes in all pre-war methods of railroad operation.

A splendid beginning has been made in northeast Minneapolis by the Minneapolis Industries Association. Their industrial tract is the result of an exhaustive study of the problem; it represents the most economical subdivision of the land for manufacturing plants, coupled with the most easily operated system of roadways and trackage. A uniform architecture is proposed, and the enterprise promises to set a standard for the entire Industrial District. Not only has an industrial area with transfer yard trackage been laid out, but a residential tract, suitable for an ideal "Garden Suburb," is also being developed.

Minneapolis' great asset, its River, is given a consistent bank parking treatment. The parks already lining the river-banks have been extended and connected, through the center of the city, by means of circulation either over or under the railroads and outside the mills. At the same time, further bridges are planned, of which the Sixth Avenue Extension is the most important. Continuity, so lacking in most American civic work, is strongly advocated for the river-bank treatment. Situated at the headwaters of navigation on the Mississippi, Minneapolis' possibilities as a port are recognized and outlined; Nicollet Island is transformed into a park, and the Falls of St. Anthony are at last to be given a setting, so that their beauty, now living almost solely as a memory, may again be restored.

Proposed Treatment of Park in Front of Museum of Fine Arts, Looking East Along 23d Street
Showing diagonal intersection of proposed new Sixth Avenue Extension

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The New Mining Community of Tyrone, N. M.

Now Building for the Burro Mountain Branch of the Phelps Dodge Corporation

Bertram Grosvenor Goodhue, Architect

THE town of Tyrone, N. M., situated a short distance above the Mexico border, is a novel experiment in town development in a number of ways. In the first place, the construction is entirely new, intended to serve the purposes of a Company Corporation community, and meet the living-requirements and necessities of its employees. The fact that, in both directions, there is every prospect of its exceeding the customary corporation standards causes it to possess a particular architectural interest and value. If the owners — the Phelps Dodge Corporation — so permit, there can be no question but the site would easily develop into the flourishing town needed to serve the surrounding neighborhood. It has not as yet, however, become the policy of the company to encourage the growth of any such town as might thus result; although Silver City, the nearest adjacent center containing store property of any importance, is lacking in many of the advantages already available for those residing in the immediate vicinity of Tyrone. Whether a change in policy may later result in such a natural development, it is now impossible to forecast. When the entire plaza has been enclosed by the projected buildings, and the advantages provided by the motion-picture theater, the club, and the hotel are fully recognized, it would seem likely to become very difficult, if not impossible, to prevent drawing to this center enough interest and business to force the company into a development considerably larger than has yet been contemplated.

As the property surrounding the mine location was acquired, it became necessary for the corporation to accept direct responsibility for the continued existence of the living-conditions found upon this property at its purchase, or to themselves attempt to improve the situation. In any event it was necessary to provide further housing accommodations, and at least such essentials to the amenities of civilization as a post-office, store headquarters, and a saloon, — all of which existed in primitive form in the happenstance native settlement on the property at the time they assumed control, — in order to provide the proper Western fundamentals necessary for the present entertainment, future health, and continued happiness of the company employees, for which practical and utilitarian purpose has the entire development been undertaken! The whole treatment of the site was influenced by its geographical character; the fact that the terminus of the railroad serving the community was at the head of this narrow valley; and that the earlier settlement, along with many of the former living-quarters, was originally further up in the valley, the dwellings running up the hillside *arroyos* on either flank. The location of the mine, in the hills to the northwest of the railroad terminus, was another consideration assisting in the final determination of its details.

Atalaya de la Tienda

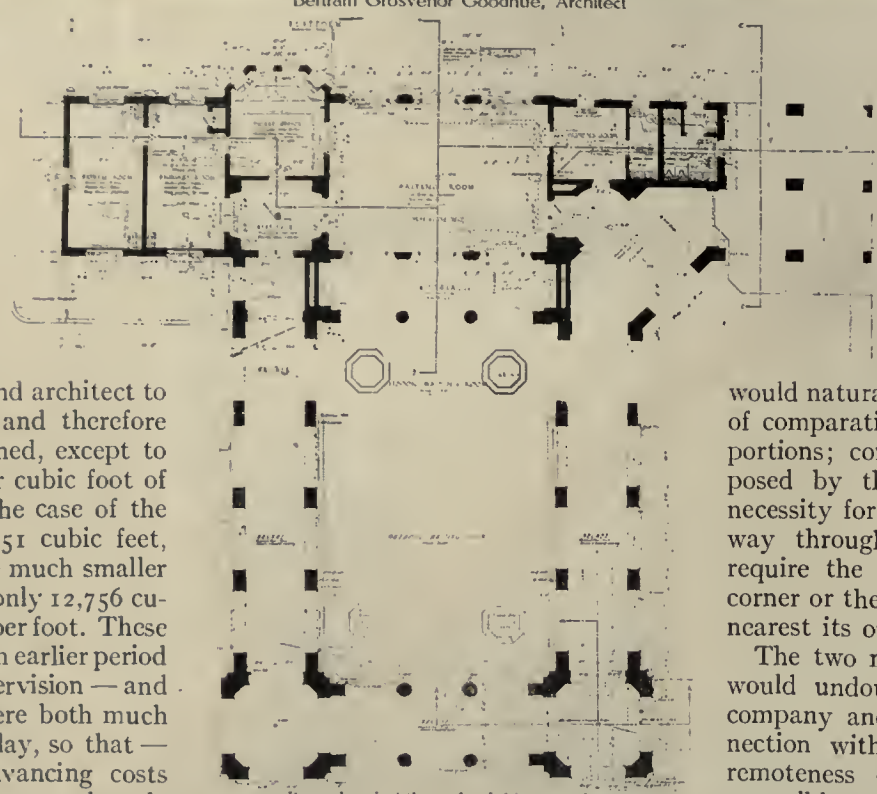
An excellent idea of the character of the country is given by the perspective and some of the general views reproduced herewith. The sandy soil is partly overgrown with scrub oaks, hardy stunted pines, and Arizona cypress, with the usual shrubbery. The foothills debouching upon the valley are broken with many small canyons or *arroyos*, and in these are the older Mexican settlements, bordering roads communicating with the higher levels. It is accordingly impossible to give any semblance of regularity or design to new street development other than that provided by North and South Mangas Street, which forms the principal means of communication with the surrounding country. Running off to the south is one of the minor canyons, along which are built the new homes for the Mexican workers, of the plan sufficiently indicated on Plate LII, and in the single selected illustration. These are sim-

General Perspective View of Tyrone, N. M., Looking North across Plaza, toward Church
Bertram Grosvenor Goodhue, Architect

ple one-story "rows" of two-room apartments that, while not perhaps ideal housing, are yet so great an improvement, both in sanitary conditions and permanence of character, over that to which the Mexican workmen had previously been accustomed, that it has seemed neither necessary nor very desirable for the present to undertake any further to better these conditions.

Railroad Station and Arcade around Outdoor Waiting-Room
Bertram Grosvenor Goodhue, Architect

About the very first permanent constructions undertaken by the corporation were in the form of a hospital building and a Court of Justice. These structures — patently of engineering origin — were started before Mr. Goodhue was retained as adviser and architect to the company development, and therefore need not further be mentioned, except to state that the cost price per cubic foot of these two buildings was, in the case of the hospital, a building of 259,651 cubic feet, 20½ cents per foot, and in the much smaller Court of Justice building, of only 12,756 cubical feet contents, 19½ cents per foot. These buildings were built at a much earlier period — without architectural supervision — and when materials and labor were both much cheaper than is the case today, so that — in comparison with the advancing costs affecting more recent buildings — they do not prove the economy of engineering design.



Reproduced at the scale of thirty-two feet to the inch
Plan of Railroad Station and Waiting-Room
Bertram Grosvenor Goodhue, Architect

It also became obvious — soon after the company assumed control — that the previous policy of erecting temporary shacks in the connecting ravines for the Mexican workmen was neither sanitarily satisfactory nor actually economical; so the company came finally to conclude it would be desirable to undertake an entirely different type of development; and with the idea in mind that the principal buildings needed for the conduct of the organization's property — in connection with those other structures required to provide community exercise and recreation for the workmen — could be grouped about a central plaza located somewhere near the end of the connecting railroad line, Mr. Goodhue was consulted, and the general arrangement indicated on the rendered plan, Plate LII, was finally adopted to govern the future physical development of the new community.

View in Outdoor Waiting-Room
Bertram Grosvenor Goodhue, Architect

By locating the suggested plaza immediately at the terminus of the road, the railroad station itself became one of the first and most necessary elements in the group. Bearing in mind the character of the site, and the conditions already laid down, the arrangement of the plaza along native Spanish lines would naturally develop as here illustrated, of comparatively spacious and ample proportions; considering the restrictions imposed by the surrounding hills and the necessity for continuing the existing roadway through the valley — which would require the station to be located at one corner or the other of the plaza, at the end nearest its outlet to the country beyond.

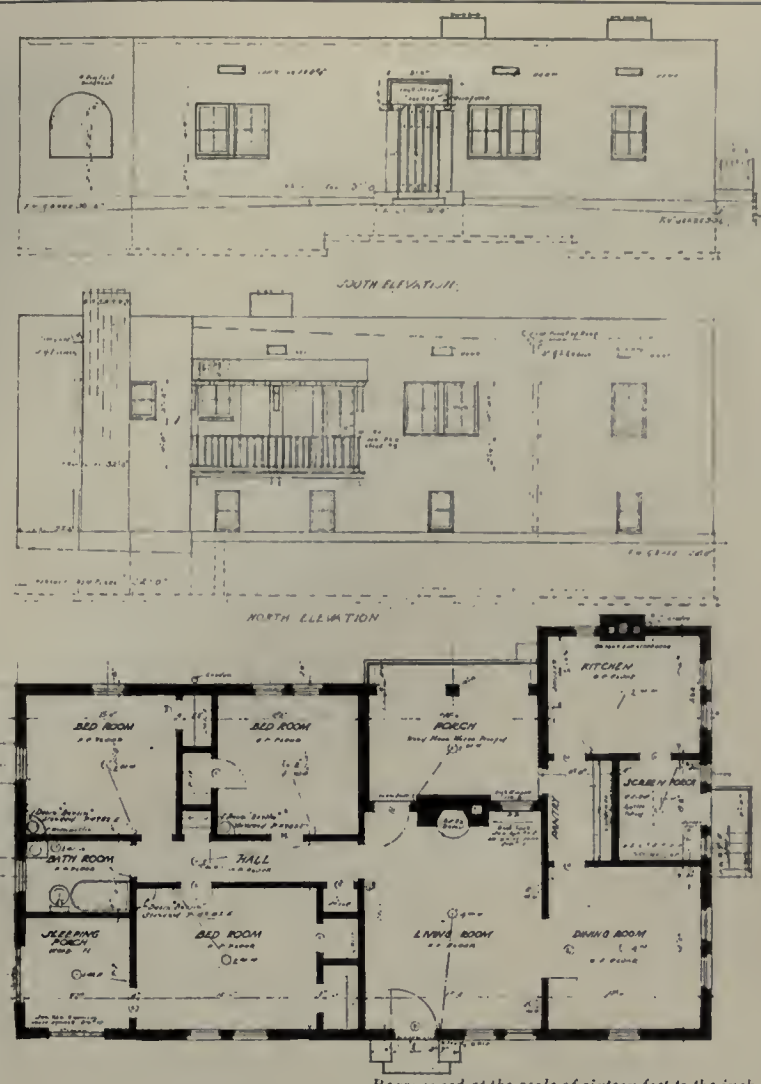
The two next most important elements would undoubtedly be the office of the company and the general store. In connection with the latter, considering the remoteness of the site, a conveniently accessible warehouse of considerable size was desirable — both to serve the convenience of the inhabitants and the needs of the mine and the company. Accordingly, the obvious advantages to be obtained by extending a spur terminal track from the railroad was an element in placing the warehouse adjoining the store, on the same side of the plaza as the station; while natural appurtenances to the latter would be both the station for freight and the post-office, also on that corner of the site; while the oil-burning heating-plant, taking care of the entire group around the plaza as well as the school, is also best placed beside the spur — in order by this means

General View of Plaza, Looking Southwest toward Railroad Station and Store Building. Corner of Office Building Showing at Left
Bertram Grosvenor Goodhue, Architect

to obtain the best of fueling facilities.

On the principal buildings already built, the costs have run as follows: The freight depot, including 98,625 cubic feet, at the total cost of $13,676, running about 14 cents per cubic foot; the station and the open-air waiting-room, which cost $27,335, including 137,065 cubic feet, or about $19\frac{9}{10}$ cents the cubic foot; the post-office, containing 80,810 cubic feet, on the estimate of $11,093, runs to about $13\frac{7}{10}$ cents — without lighting-fixtures and hardware; the office building, comprising 254,040 cubic feet, at $52,450, makes the price approximately $20\frac{1}{2}$ cents per cubic foot. Other building costs were on the store and warehouse, totaling 1,275,998 cubic feet, at $156,824, making $12\frac{1}{3}$ cents per cubical foot of contents; the bank and shop building, of 199,139 cubic foot contents, and a cost (without heat) of $21\frac{2}{10}$ cents; and the schoolhouse, of 373,750 cubic feet, and a cost of $72,202, or $19\frac{3}{10}$ cents per cubic foot.

The office building, facing the department store on the opposite side of the plaza, occupies the other most important location, and is further emphasized by being recessed, and interrupting the arcade, which otherwise serves to tie together the structures surrounding the square. The upper story of the office building houses local administration offices for the corporation, and the second stories of the bank and shop buildings provide offices for dentists, doctors, etc. The schoolhouse is also built — and the west side of the square is soon to be completed by the club-house and adjacent shops. This leaves the hotel and the moving-picture theater for future development, and of this group, one section — the bank building, shops, and offices — is already erected, and the others will probably follow in the sequence named. The hotel is placed conveniently near the railroad station, just as the club and moving-picture theater are nearest the dwelling section,— across from the club-house, which provides, on the second floor, a hall for entertainments and dances, that can also be used for motion pictures and dramatic performances, pending the completion of the theater. The first and second floors are for both men and women; the basement contains showers, dressing-rooms, etc., for the men, opening upon the tennis and recreation grounds on the lower level between the club and the school beyond, separately reached by an outer doorway at the lower grade.



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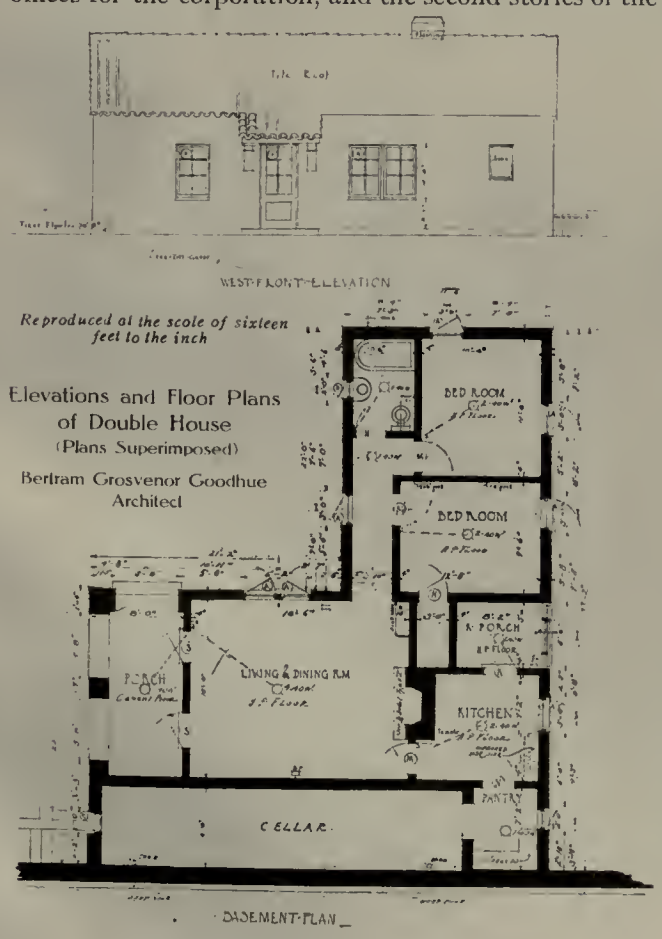
Elevations and Floor Plan of Superintendent's House

Bertram Grosvenor Goodhue, Architect

Meanwhile, the plaza — which is 140 feet wide by 250 feet long between the arcades — is being planted, with convenient crossing walks communicating with structures surrounding the square, a large open area at the center being intentionally left for dancing on evening or festal occasions. A central bandstand may later be built, and once the plaza is enclosed by the arcade, its flat roofs, with the windows and the roofs of the buildings above,



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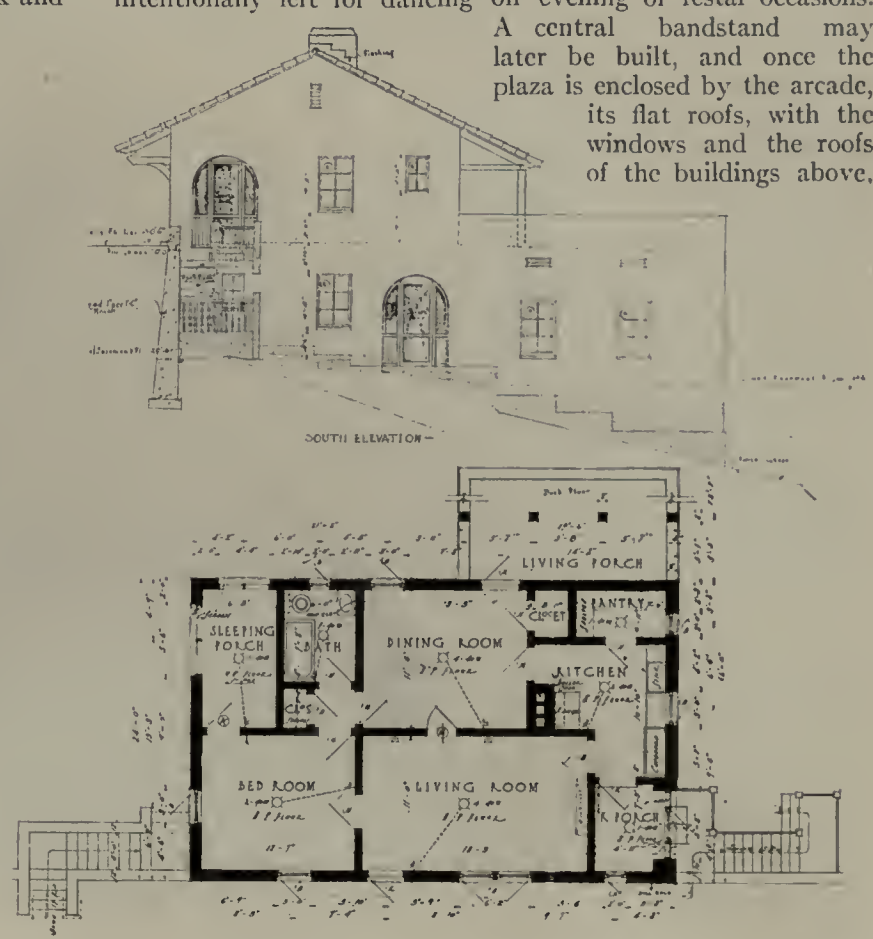
Elevations and Floor Plans of Double House

(Plans Superimposed)

Bertram Grosvenor Goodhue Architect



will give unequaled vantage points from which to view a processional pageant, or dramatic or community recreational entertainments, for which the plaza will provide both an unusual opportunity and an unusual and inspiring setting.

Post-Office, Old Mexican Village

Mexican Dwellings, Old Style

The element of color plays an important part in this square, the final plaster coats being lightly tinted the following definite casts: The store building is pearl white; the warehouse a yellowish buff; the bank and shop buildings have a purplish character, with the theater a bluish tint — in this case the purplish tone of the bank and shop building arcade being continued below the blue walls of the theater! The post-office and the railroad station are a pinkish buff; the club-house a grayish neutral tone, with the hotel supplying the transitional note between the pinkish and purple tones of the buildings on either side. The walls of the more remote school are of a grayish yellow tone.

Two-Room Cement Mexican Dwellings, New Style
Bertram Grosvenor Goodhue, Architect

The other principal element, dominating the group as it is first seen from the arcades of the railroad station, is the Roman Catholic Church, which has as yet only been studied sufficiently to indicate its position in the general scheme, where it appears in both plan and general perspective. A future church, to be used in common by all the Protestant sects, is to be provided; while to meet this temporary need, a chapel with about one hundred seats is soon to be built.

Double American House with Tile Roof
Bertram Grosvenor Goodhue, Architect

Two other minor elements are the garage and fire station, at the extreme left of the plan and higher end of the square. Studies for the fire station are already made, and the construction of the adjoining garage and saloon building is well under way. The latter supplants a similar thriving center of interest existing when the property was taken over by the corporation. As it was necessary to continue the resort, a new building, providing a modern and sanitary structure, was started, although—as the State has in the meanwhile gone "dry"! — it will soon become a lunch counter or restaurant, run in connection with the station.

Two American Houses, Flat Roof Type
Bertram Grosvenor Goodhue, Architect

The old workingmen's settlement was in a canyon opening into the valley, further north, running up into the foothills toward the mine; and the new residences for the American families have been built along the crest of the ridge between these valleys, on a new roadway, which gave opportunity for houses arranged for two families, separated on an upper and a lower level. They appear on the general plan, Plate LII, on the short road ending in a circular turn which leads off the lower level of Hilltop Road. The upper story opens on the higher level. One of these unusual plans is illustrated at the bottom of page 61.

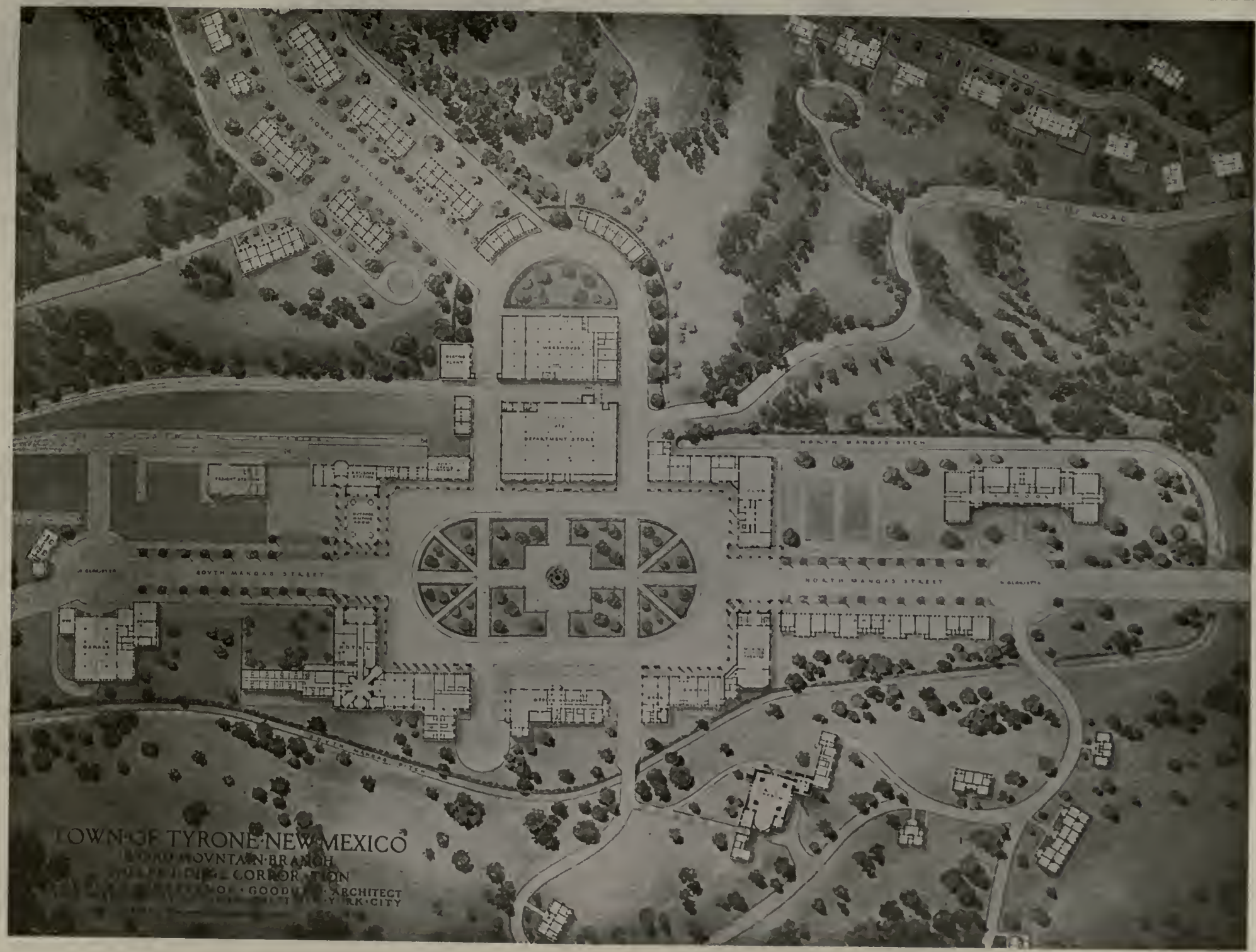
First and Second American House Groups (latter shown in foreground under construction)

The Mexican houses are built with tile walls, cement floors, wooden studs and joists, plastered on metal lath, and many have asbestos roofing. They consist of four principal types: A three-room single-family house (5,755 cubic feet, costing $1,035.23, or 18 cents per cubic foot); a two-room double house (7,480 cubic feet, costing $1,291.39, or $17\frac{2}{10}$ cents per cubic foot); a three-room double house (10,818 cubic feet, costing $1,676.15, or $15\frac{4}{10}$ cents per cubic foot); and a twelve-room sextuple house (25,601 cubic feet, costing $2,902.71, or $11\frac{3}{10}$ cents per cubic foot); — the average cubic foot cost of these houses being $13\frac{9}{10}$ cents.

Of the American houses, two groups of fifteen houses each (accommodating twenty families apiece) have been built. The houses vary in size from three to six rooms, or 13,926 to 23,897 cubic feet, and the price from $2,148.45 to $3,572.80, varying the cubical contents cost from $13\frac{8}{10}$ cents to $16\frac{1}{10}$ cents, the average cost being $15\frac{2}{10}$ cents. The first development was estimated in November, 1915, when the fifteen houses, for twenty families, totaled $40,608.05, or $483.43 per room, including the bath.

The construction included a foundation of rubble concrete, outer walls of hollow tile, with brick for arches; inner walls or wooden studs, with metal lath and plaster. The houses had front and rear porches, and were screened throughout. The cost included plumbing, wiring, electric fixtures, fencing, and hardware.

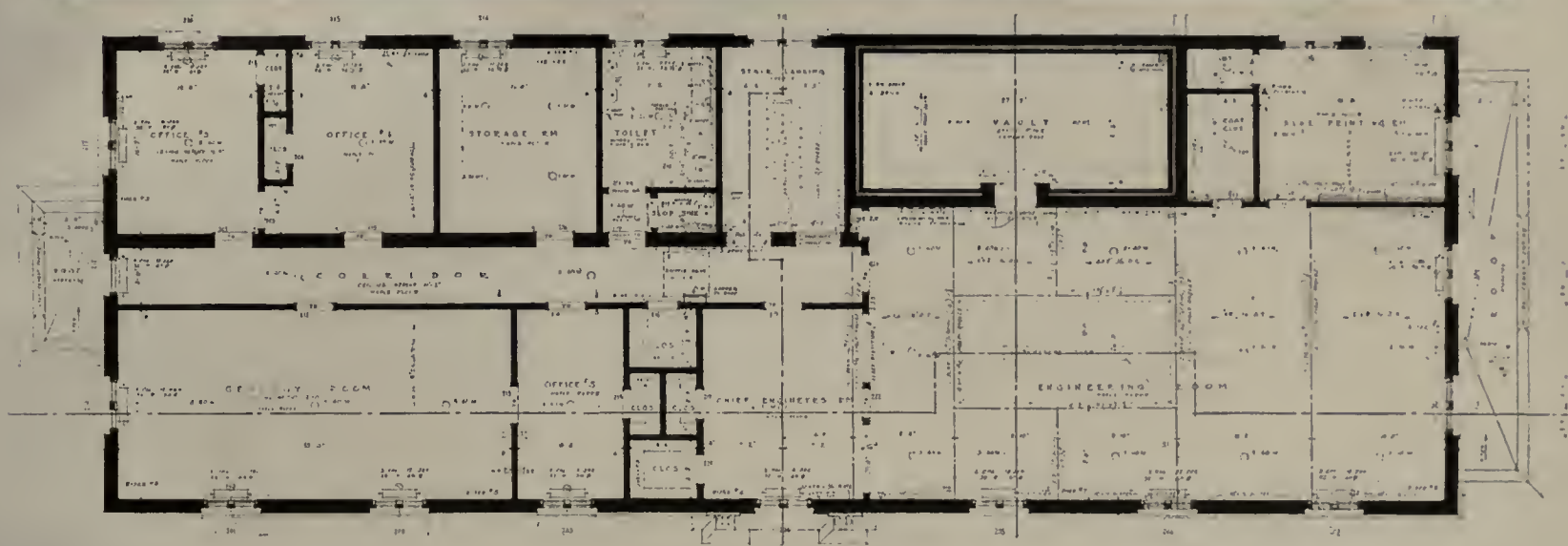
The second development, figured in October, 1916, was of the same size, but built from new plans, including more tile roofs, added at an actual cost of $561.34 an house, for interest and variety. The cubical contents ran from 16,121 feet to 34,500, and the cost from $2,556.35 to $6,119. The total cost was $60,417.45, averaging $17\frac{3}{10}$ cents per cubic foot. The mining superintendent's house, shown on page 61, cost $5,828.14.



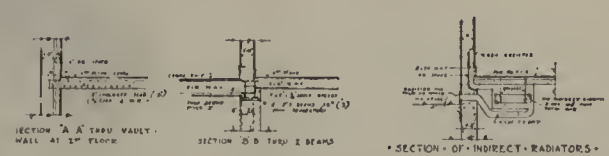
GENERAL PLAN OF CENTRAL PLAZA, SHOWING IMMEDIATE SURROUNDINGS

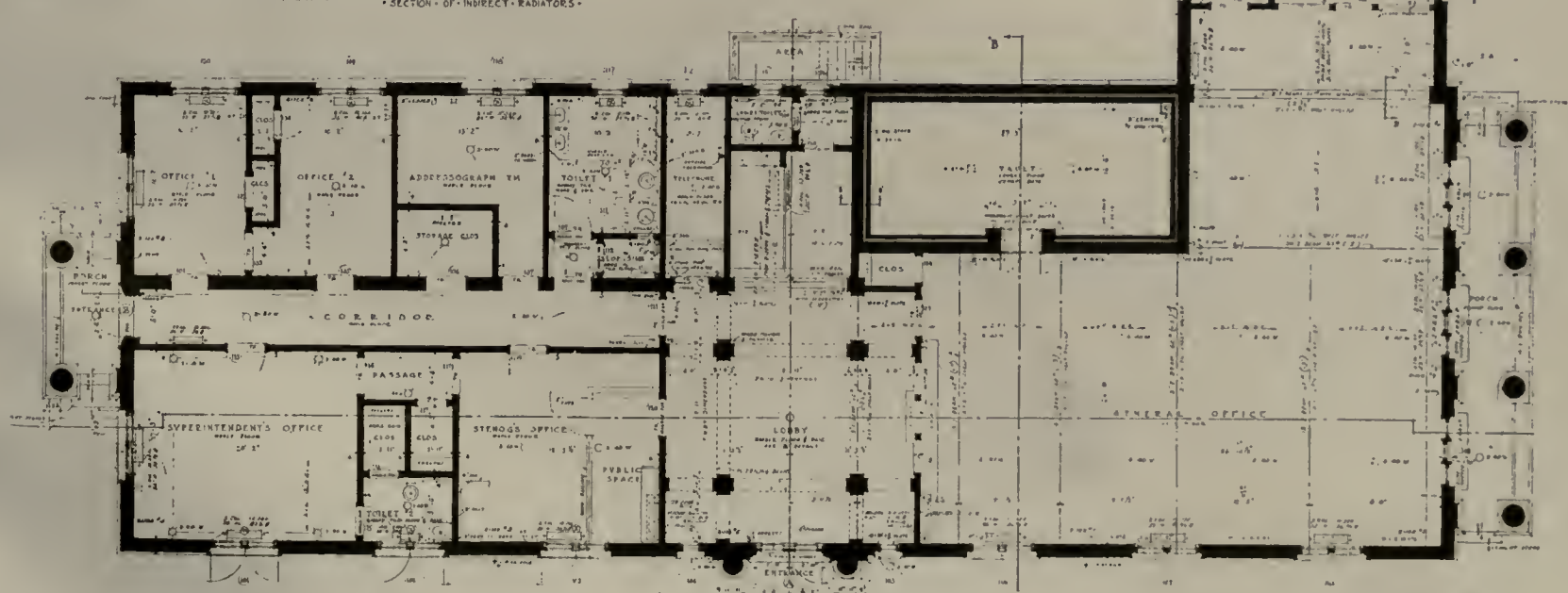
TOWN OF TYRONE, NEW MEXICO

BERTRAM GROSVENOR GOODHUE, ARCHITECT



· SECOND · FLOOR · PLAN ·





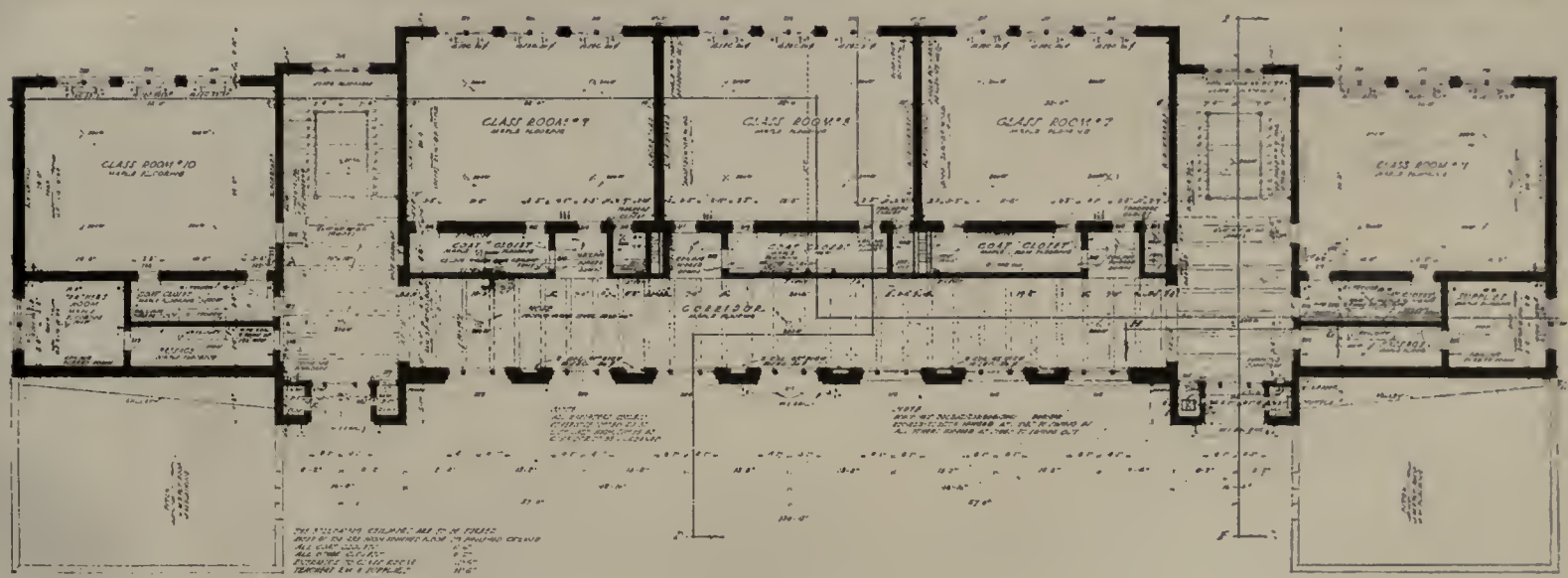
FIRST · FLOOR · PLAN ·

Plans reproduced on the scale of sixteen feet to the inch.

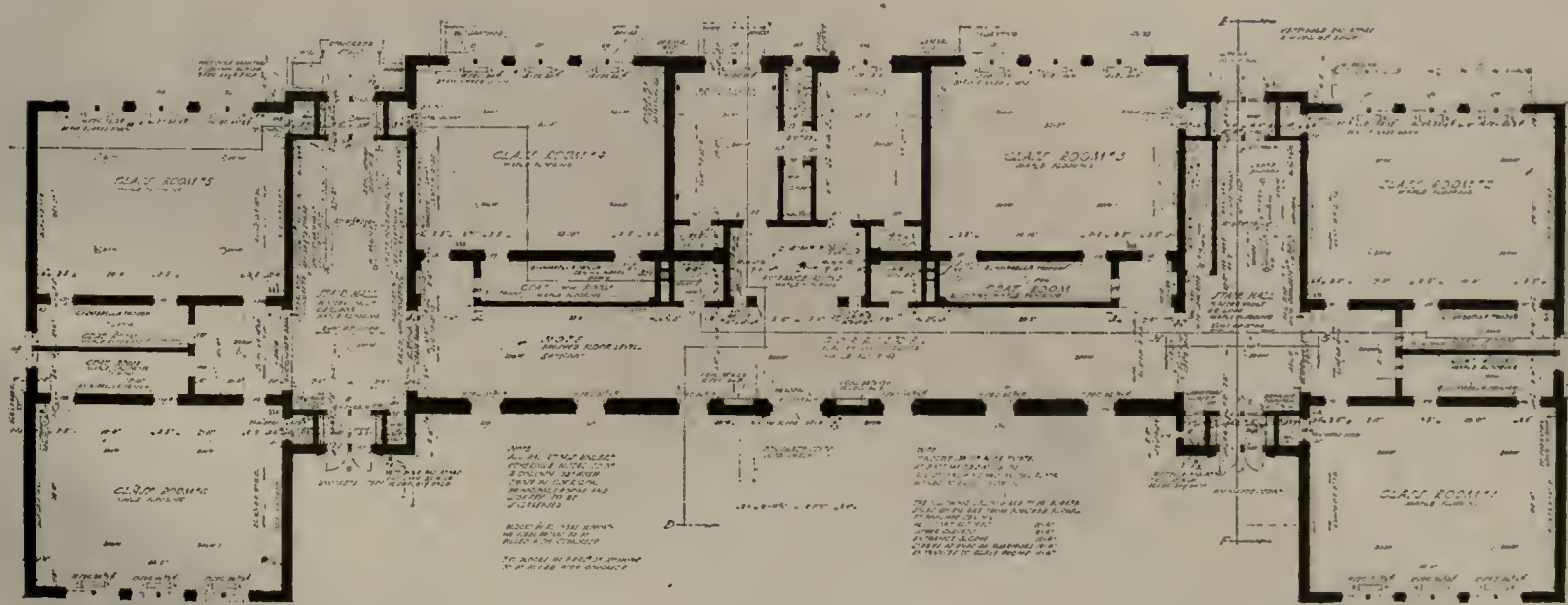
OFFICE AND ADMINISTRATION BUILDING

PHELPS-DODGE CORPORATION. BURRO MOUNTAIN BRANCH, TYRONE, NEW MEXICO

BERTRAM GROSVENOR GOODHUE, ARCHITECT



SECOND FLOOR PLAN



FIRST FLOOR PLAN

Plans reproduced at the scale of twenty-four feet to the inch.

SCHOOLHOUSE AT TYRONE, NEW MEXICO

BERTRAM GROSVENOR GOODHUE, ARCHITECT

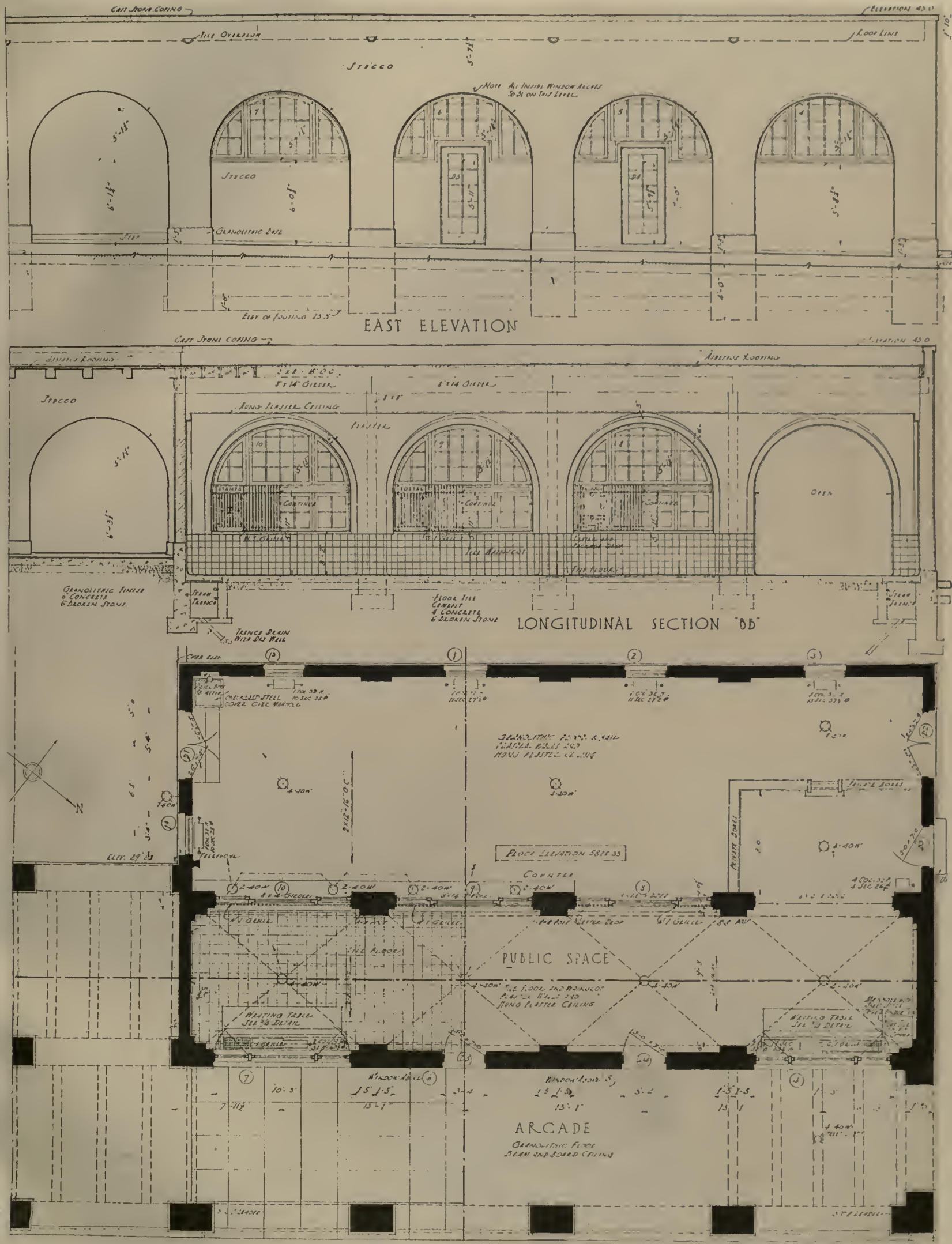
Elevation and section produced at the scale of sixteen feet to the inch

SECTION THORUGH BANKING ROOM

ELEVATION AND SECTION OF GENERAL STORE BUILDING

GENERAL STORE BUILDING AND BANK, TOWN OF TYRONE, N. M.

BERTRAM GROSVENOR GOODHUE, ARCHITECT

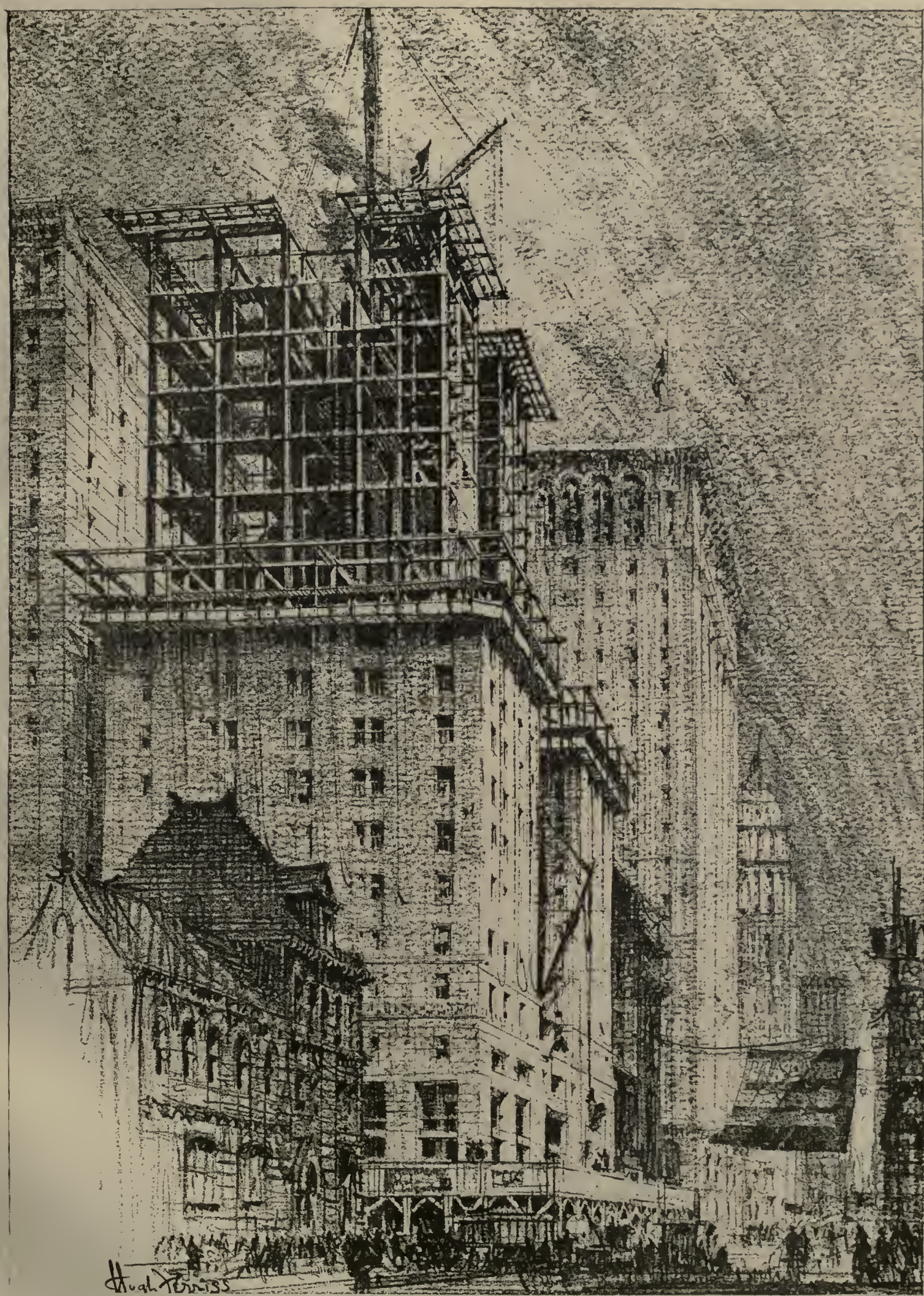


Reproduced at the scale of eight feet to the inch

ELEVATION, SECTION, AND PLAN OF POST-OFFICE

TOWN OF TYRONE, N. M.

BERTRAM GROSVENOR GOODHUE, ARCHITECT



Reproduced through the courtesy of Russel B. Smith, C. E.

VIEW DOWN MADISON AVENUE

SHOWING THE BUILDING FOR THE EQUITABLE TRUST, ONE OF THE FIRST DESIGNED UNDER NEW SET-BACK RESTRICTIONS OF NEW YORK ZONING LAW

FROM A CRAYON DRAWING BY HUGH FERRISS

Elmwood Park

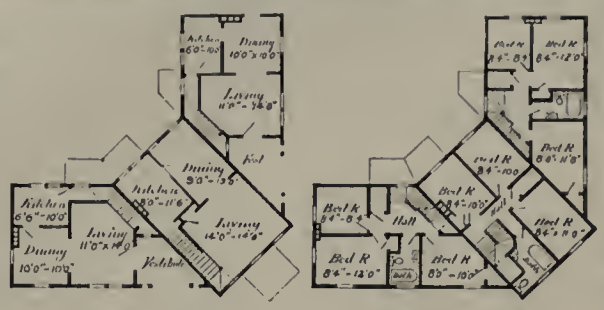
An Housing Enterprise at Bethlehem, Pa.

By Ralph F. Warner

AT Bethlehem, on the Lehigh River, sixty miles northwest of Philadelphia, are the munition manufacturing plants of the Bethlehem Steel Company, lining the south bank of the river for a distance of ten miles, extending almost to Easton. Contrasted with the stupendous industrial activity on the south shore, the north shore presents a picture of nature undisturbed for years, and still possesses much the same character that it had a century ago, when Bethlehem was a thriving Moravian settlement. The Elmwood housing enterprise is located just back of the north shore, and east of the old town, on land that a few years ago was given over to agricultural use.

Section of Development Showing Curved Street

With the outbreak of the European war, the steel mills across the river suddenly became one of the chief sources for the supply of munitions to the Allied nations — and vast additions in equipment and men were required. A pressing need arose for houses to accommodate the influx of wage-earners. To assist in meeting this need the Dodson Realty Corporation of Bethlehem was organized to acquire land and to construct and sell houses. The officials of this company had had experience in the housing of operatives at several coal-mining enterprises under their control, and the work at Elmwood Park was therefore carried out by the architect of these earlier undertakings, George S. Welsh, of Wilkes-Barre, Pa.



First Floor Plan. *Second Floor Plan*

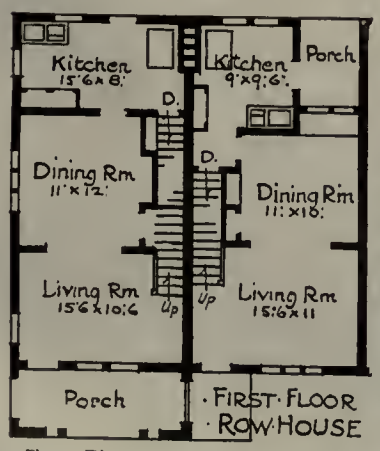
Floor Plans of Triple Corner House, Type E

The land on which the houses have been built cost approximately $500 an acre, and has been subdivided into lots mainly 20 by 80 feet (corner lots 40 by 80 feet); served by streets 50 feet wide, providing about 20 houses to the acre. The cost of the unimproved lot was under $25, and a little less than $120 per lot was spent in paving, planting, and providing the necessary underground utilities.

The property is rectangular in outline and quite level, so a street layout of the simplest character has been adopted — variety and picturesqueness being gained by introducing two semicircular streets, linking two parallel border streets which run the length of the property at either side. Sidewalks are constructed next the curb to add breadth to the street.

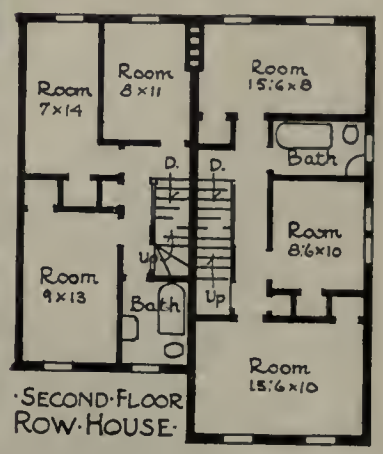
Contracts for the first houses were let in May, 1916. Since that time 267 houses have been built. Most of the constructed houses are either

View of Triple Corner House, Type E
George S. Welsh, Architect



Floor Plans, Row House, Type F

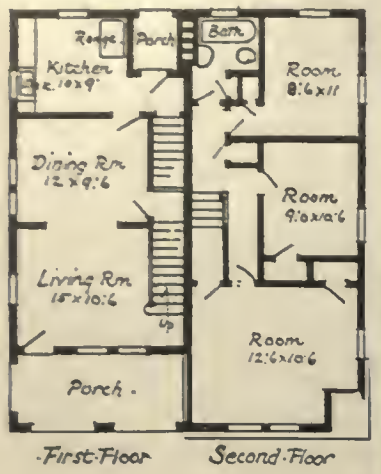
View Looking Down One of Straight Streets



Floor Plans, Row House, Type F

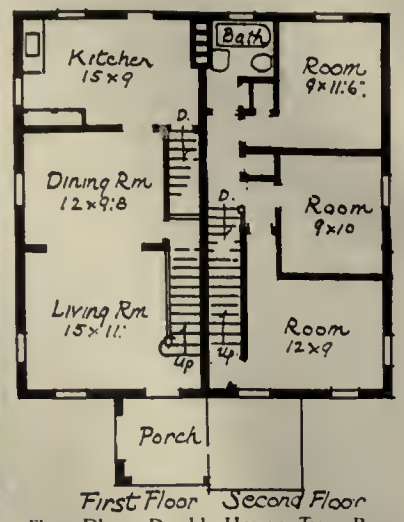
View of Six-House Brick Row, Type F
George S. Welsh, Architect

View of Seven-House Plaster Row, Type F
George S. Welsh, Architect



Floor Plans, Double House, Type A

Photographic View, Double House, Type A
George S. Welsh, Architect



Floor Plans, Double House, Type B

semi-detached or in terraces. In the first instance they are located on lot units 20 feet in width by 80 feet in depth (a double house on a plot with 40 feet frontage), and the buildings themselves measure 14 to 16 feet in width by 32 to 38 feet in depth — a double unit having a width of from 28 to 32 feet. This leaves 8 to 10 feet between houses having a set-back of 23 feet up — rather close together for the amount of light desirable. In the terrace or row houses the end house lots measure 20 feet by 80 feet, and the buildings (plus a second-story extension over the porch) 16 feet by 32 feet — the intermediate row house lots are 16 by 80 feet, the structure 16 by 32 feet. Playgrounds and service alleys are also provided in the plan. (See Publishers' Page.)

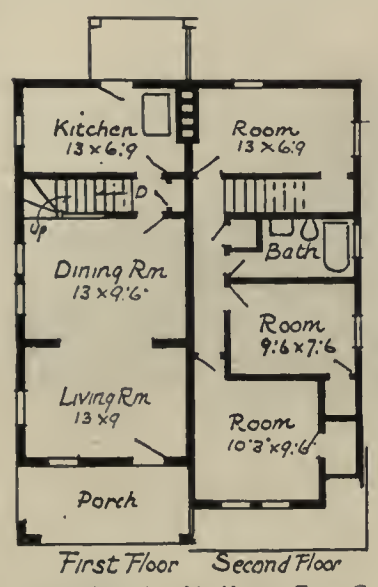
Six house types are shown, four of the semi-detached type and two of the terrace type. All have six rooms and complete bath, unfinished attic, and hot-air basement heating-plant. Considering the types together, the living-rooms range from 117 to 165 square feet; dining-rooms from 100 to 123 square feet; kitchens from 65 to 135 square feet; and bedrooms from 70 to 144 square feet — these areas complying with standards which experience has shown desirable. In addition the rooms are well proportioned and designed to accommodate the necessary furniture. With one exception, all rooms, except the intermediate rooms, have cross ventilation.

Undoubtedly the most desirable arrangement of the stairway is shown in those types where the risers start a few feet from the entrance doorway. Type D, with a front vestibule, a living-room fireplace (requiring an additional chimney) and bookcase, and kitchen laundry tubs, costs $533 per unit more than type A and $408 more than type B, although the actual floor areas and room accommodations do not differ materially.

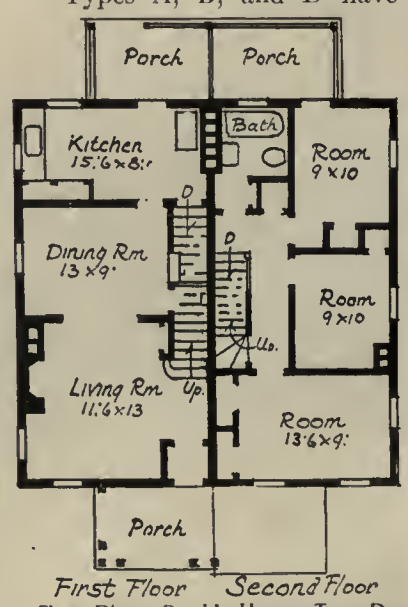
Types A and D have closets in all bedrooms and in the bath and hall. Type B has linen and bathroom closets, but has one bedroom without a closet. Type C has no bath closet, but a linen closet in the hall. The central unit of type E has no bedroom or bath closets, but two hall closets. The end units of type E have one bedroom without a closet.

Types A, B, and D have bathrooms in adjoining houses on opposite sides of the party wall, an arrangement which makes for economy in plumbing. Type A has a second story and rear extension of stucco on hollow tile, supported on a first story of brick tile. Type C, the lowest-priced semi-detached house, has frame and shingle exterior walls on the second story.

Tile construction has been generally used in these houses, with hollow tile for the foundations of all types and, in combination with stucco, for the walls of types B, D, E, and F. A patented form of brick tile, called Pen-tex tile, measuring 2 inches by 8 inches by 8 inches, — with an attractive exposed surface of rough texture similar



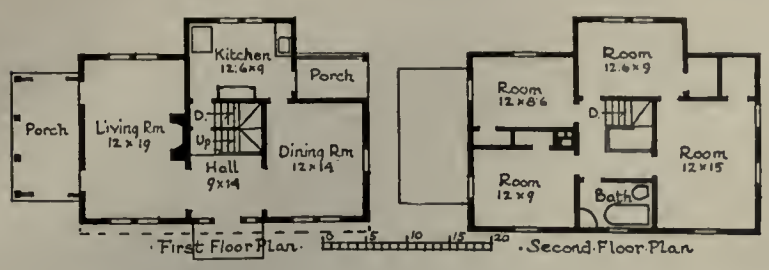
Floor Plans, Double House, Type C



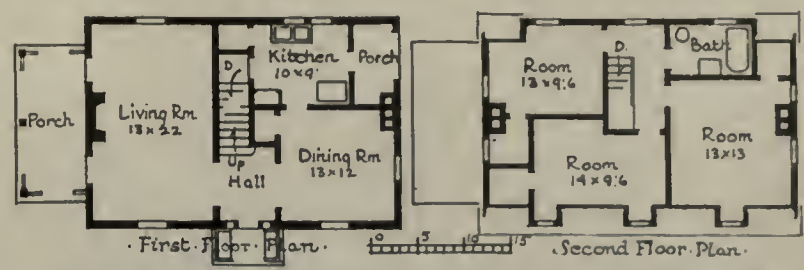
Floor Plans, Double House, Type D

Exterior View, Brick Double House, Type D
George S. Welsh, Architect

Exterior View, Plaster Double House, Type D, with Germantown Hood
George S. Welsh, Architect



Floor Plans, Single House with Overhang, Next Below



Floor Plans (reversed), Single House with Dormers, at Bottom of Page

to ordinary brick, and an air space between the exposed surface and the interior face, which is also of rough texture, — has been used for the first stories of types A and C, and in certain units for the entire wall construction of types D and F, with plaster applied directly on the interior face.

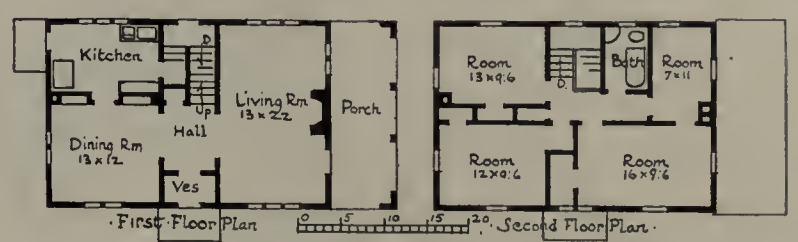
Considering the design, floor plans, construction, and cost, type A is perhaps the most satisfactory, as it costs $124 less than type B, $533 less than type D, and $246 less than type E. The same house costs $299 more than type C (with frame second story) and $195 more than type F (row house). The most expensive houses are those built entirely of tile. By various combinations of materials for wall construction considerable reductions can be made, compared with the cost of all-tile construction — based on estimates of November 1, 1916, as folows:

Tile and stucco first story; frame, expanded metal, and stucco second story, $57.50. Tile and stucco or Pen-tex tile first story; frame and shingle second story, $75.00. Frame, expanded metal, and stucco, entire structure — with sheathing, $192.00; without sheathing, $134.00. Frame, expanded metal, and stucco first story; frame and shingle second story, $142.00. A tile party wall is included in all figures. The details of expenditures are shown in the table on the Publishers' Page.

With 15.92 acres in the entire development, 3.51 acres are used for streets, 2 acres

Single-House Design, Costing, in 1917, Approximately $3,600
George S. Welsh, Architect

Single-House Design in Plaster
George S. Welsh, Architect



Floor Plans (reversed), Single Plaster House Above

for parks and playgrounds, and 10.41 acres for salable lots. The houses are not rented, but sold on the instalment plan, covering a ten-year payment period, adapted to the average earning of the occupants — from $25 a week up. Development costs have totaled $3,300 per acre, exclusive of buildings and other improvements. The grading and excavation of streets have cost $903 per acre. Only five detached houses — of from 7 to 8 rooms — have been built. The type D, plaster double house, with Germantown hood, increased in cost from $5,065 in 1915 to $5,288 in 1916 and $5,663 in 1918. The double house, top of page 64, cost in 1918 approximately $4,856. The picture nearest the top of this page was built from the second-prize design submitted in the *New York Sun* Competition for a $4,500 house. The actual cost of this house, in 1917, was $3,600.

The Elmwood Park development illustrates the possibilities of attractive low-cost semi-detached and row-house construction. Excepting the rear extension, type A, the architectural treatment shows a successful handling of wage-earners' houses. The materials are, in general, of a permanent fire-resisting character, and the architect has met with marked success with a new form of tile construction. The floor plans show study and are, in general, well arranged. Finally, the selling prices are remarkably low, considering the character of the development as a whole.

Single Frame House Design, Costing, in 1918, Approximately $3,800
George S. Welsh, Architect

Single Stucco House Design, Costing, in 1918, Approximately $4,000
George S. Welsh, Architect

New Uses for the "Zoning" System

As Adopted by New York City and Applicable to American Communities

The radical and drastic action taken by New York City to control its future physical development and stabilize future land values by various new applications of the continental "zoning" system is so revolutionary in this North American Republic that this careful résumé of the action taken, and its intended and probable results, has been prepared for the information of our readers and the benefit of other communities. Interest in the Districting Law in New York City brought about a conference there last November to acquaint experts on City Planning with the results of the zoning principles adopted by New York. Newark, N. J., Berkeley and Sacramento, Cal., have also ordinances regulating the use of buildings; while cities now discussing proposed zoning ordinances include Philadelphia, Cambridge, St. Louis, Dallas, Buffalo, Chicago, San Francisco, Baltimore, Oakland, Fresno, Cal., and Milwaukee; and the States of California, Iowa, New Jersey, and New York have passed permissive legislation allowing the adoption of zoning schemes by their cities. Those desiring the exact wording of the New York charter provisions are referred to the "Final Report," issued by the Commission on Building Districts and Restrictions, on June 2, 1916, and the accompanying "Building Zone Plan" of the Board of Estimate and Apportionment of the City of New York, dated July 18, 1916.— EDITOR.

As the result of a resolution proposed in February, 1913, by Mr. George McAneny, a Commission of twenty individuals was appointed by the Board of Estimate to study the possible future regulation of the sky-scraper development of New York City. The chairman of this Commission was Mr. Edward M. Bassett; the secretary, Mr. George B. Ford. The Commission undertook to make a thorough study of the whole situation, including all the various detailed elements entering into the problem,— the rental of rooms, lighting, vacancies, fire-risk, and protection,— which were all summarized in the published report on the Height of Buildings, along with a résumé of some of the principal regulations in force in Paris, Germany, and some American cities.

The Commission fully realized that, in order to avoid continuous reconstruction of existing buildings, and the losses and defects resulting from converting old buildings to new uses, it was undesirable to base any permanent districting plan solely on those forms of construction suiting the needs of the present moment. As any city grows, types of construction must be authorized that will be appropriate for any necessity of use that will justifiably be demanded by the common community good within the next twenty-five or fifty years. A city not built with due regard to probable future growth must be rebuilt over and over again, at enormous expense and reckless depreciation of values, both structural and real estate. It was this very evil that New York was now realizing, and from which her investors were so desirous to find means of escape. This Commission therefore reported a rule for the future control of extreme height, based upon the ultimate building limit being not over two and one half times the width of the fronting street, with a required set-back of one foot for every additional five feet of height, and permission to continue a tower to any greater height desired — providing it did not exceed 25 per cent of the area of the lot covered.

In this report of the Height of Buildings Commission two charter amendments were recommended and, later, passed by the State Legislature, giving the Board of Estimate power to regulate building height and locations, and to appoint a new commission to study and define required zone boundaries and the regulations necessary to govern them. For purposes of study and presentation the new Commission then divided the entire problem into three general heads, as follows: first, the matter of height development; second, the percentage of a lot area that could be covered; and third, the use of the buildings and their occupation.

The law under which this Commission on Building Districts and Restrictions was appointed was permissive legislation, and was so framed that, *when* the Commission report was accepted and approved by the Board of Estimate, it became immediately effective; and this final report was submitted by the Commission on June 2, and accepted—substantially in full—by the Board of Estimate on July 25, 1916.

As a portion of the Commission's report, three different maps were worked out for each of the five boroughs of the city, upon which a long series of hearings was then held in the different districts. These public hearings were chiefly remarkable in that they were not only attended by great numbers of people, showing the active interest taken by the community in the legislation proposed, but that they also disclosed those attending to be surprisingly unanimous in their approval, and they produced much valuable and suggestive criticism upon these projected maps. As a result, these maps were afterwards corrected, utilizing these suggestions, and made generally available by publication.

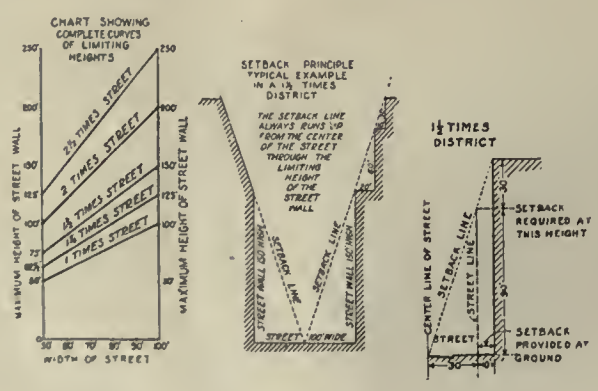
Of the three maps finally issued, the first had to do with the heights of buildings, based upon the well-known principle of their relation to the widths of the facing street; the ultimate limit along principal thoroughfares varying from one to two and a half times the street width — the city being divided into zones where the height is limited to two and a half times, setting back one foot for every five feet of additional height; twice the street width, setting back one to four; one and a half times, with a set-back equivalent of one to three; another zone, one and a quarter times, the set-back being one to two and one half, and in a fifth zone structures were limited to just the height of the street width, with a set-back for additional height equivalent to one to two.

The second map was concerned with the percentage of the lot to be covered, and this map provided the basis for the zone system based upon the use and occupation of buildings — dividing all districts into five sections. First, the A section; intended for warehouses and similar developments, where practically the entire area of the lot might be covered by the building. Second, the B zone; where 90 per cent of the lot areas could be built over, this being largely planned for the development of business localities. Third, the C zone, permitting 70 per cent development, intended principally for apartments and retail stores. Fourth, the D zone, with 50 per cent developed, intended to cover the areas where blocks of houses and stores could be built; and fifth, the E zone, allowing 50 per cent of the lot to be developed for the first floor and 30 per cent above the second, intended for the growth of detached houses and private families.

The third map dealt with the restrictions, or zoning, of buildings as to their use and occupations; the residence section of course making provision for such other types of building as should conveniently be in immediate relation to the dwelling sections,— clubs, churches, schools, etc.; the business section providing also for light factory and manufacturing purposes, limited, however, to a ratio not to exceed 25 per cent of occupancy of the buildings in these sections; these trades to include such manufactures as millinery, etc., and entirely to exclude all offensive and heavy manufacturing occupation types. Finally, the unrestricted areas remained available for development as residences, business, or for the heaviest industries.

These maps were accompanied by an ordinance providing the necessary regulation for the future correction or alteration of details, or for future changes. Most important of the labors of the Commission was an amendment to the legislation framed the previous winter, which gave the Board of Estimate power to alter these zones and restrictions *unless* more than 20 per cent of the frontage affected by such proposed alterations protested in writing, then requiring the unanimous assumption of these changes by the members of the Board of Estimate. This amendment is practically intended to serve the purpose of giving each locality concerned the full benefits available from home rule.

These "zones" are not, in all three cases, applied exclusively to "areas," but are often adapted to apply to sepa-



rate and separating streets. It should also be noted that, while objectionable business developments are not permitted in residence districts, there is nothing to prevent the use of portions of these business districts for dwelling purposes, provided the property owner so elects; and also, where any development in a restricted district is along the lines of a *less* restricted type, — such as putting a dwelling into the A district, for instance, — the restrictions of the next zone (in this case, B) would apply.

While these maps and zoning restrictions were not regarded by the Commission as perfect, they were nevertheless conservatively determined to provide a workable basis that, aided by some few years of experimental operation, should produce a successful system for controlling the real-estate development of an American community such as New York has now become. These zones and restrictions will undoubtedly stabilize land values; and they are further planned to increase — never to depreciate — property values.

It was this fact that brought the universal support of the public and press, which was so notable and surprising a feature of this experiment in the limitation of the right of the individual for the general benefit of the whole community. It should also be noted that, so far as height is concerned, — the more important limitation to first come into evidence, — a certain natural balance is introduced by the older, more intensively developed and crowded portions of down-town Manhattan being based upon widths of existing narrow and crowded thoroughfares, which will tend to keep down the height of future buildings constructed upon them; and also by the fact that, for the purposes of this law, the widest streets are arbitrarily construed to be of 100 feet width.

To illustrate by one or two concrete examples: the application of these restrictions will not prevent the future construction of a Woolworth Building, — located in a possible similar position, — while future Fifth Avenue buildings will all remain of approximately the height of Tiffany's store (the present average), or, along 42nd Street, of the Knickerbocker Hotel. On the main avenues, the fourteen-story apartment represents about the limit of height, with the eight-story apartment illustrating the standard on the narrower cross-streets; while the restriction allowing of the height being extended by setting the façade back from the street line, for either a part or the whole of its height, permits of introducing a rather interesting irregularity into the street development that will, at the same time, tend to open up and provide better light for all adjoining property. Of course, the ultimate restriction is imposed — as always! — by those practical limitations beyond which it is impossible to construct a building without making its cost of investment and operation more than its possible income-producing value,— limits which have already been reached in the down-town section, where halls and elevator wells in the very tall buildings have been proved to occupy so large a percentage of the structure's area as to seriously affect their net productive value to the owner. This limitation is further intensified by restricting the unlimited tower development to a quarter of the lot area.

The provision for making this legislation effective invokes merely the customary "police powers" of the State, which places any violation of the adopted ordinances in exactly the same category as all other public nuisances, over which the State now exercises parental control. Thus no opportunity is presented the individual to demand or be paid for damages, imaginary or otherwise, under the operation of this law; as the rights of the individual are *not* taken by eminent domain and paid for by the State — as has generally followed improving or restricting legislation in the past.

In providing for carrying on these regulations under the State police power, they were placed upon the same footing as other provisions made for public health and safety, which can be enforced without compensation for individual injury or expense involved. The Commission made their regulations so conservative and fair that where brought into court they were held as entirely proper exercise of the police power invoked. In this connection Supreme State Courts have recently very generally broadened their interpretations of property rights along lines that should greatly assist in controlling the future development of property in the directions these regulations impose.

Although entirely incidental, yet the actual result of putting these regulations into effect will be to make the streets of New York City within the next two generations both more beautiful and more harmonious. Providing, as it does, all encouragement and incentive for the use of towers and terraced roofs, it at the same time works toward a uniform cornice line, that in residential sections should gradually produce the same effect that is now so pleasantly obvious on the streets of Paris. It should also be noted that all these restrictions are, in New York City, with its greatly intensive existing congestion, far less drastic than they should normally be in other less completely built up communities. Therefore no community of smaller size should accept or attempt to apply these restrictions without readjusting or re-studying them so as to adapt them to their own different sets of existing conditions. The entire height limit section would, for instance, be upset if applied as a standard to a community where uniformly wider street widths exist,— when heights not permitted even in New York City would at once be legalized for new business structures!

Legislation of this progressive sort could not have been obtained with this complete approval and support of the community, *except* from the fact that New Yorkers have been so thoroughly and long victims of the lawless, or unrestricted, type of development that they had become thoroughly convinced of the great need and direct advantages of restrictive legislation. In fact, the need of such restrictions had elsewhere been publicly proclaimed by advertisements (separately referred to) announcing the agreement between the retail stores, which had agreed among themselves to boycott those wholesale trades that refused to vacate that portion of the city that the retail stores had decided should in future be maintained exclusively for retail uses.

These movements were both actually animated by the same impulse, and aimed to obtain the same result, although one employed the somewhat dubious method of boycott while the other utilized the unexceptional and legally contractural method, in which the entire community agrees together to accomplish a desired purpose. In this particular instance, it might be noted that the boycott system has ventured to go much further than the proposed zoning legislation — because its force is to be employed retro-actively as well. In other words, it requires the vacation of premises already developed, which had not been attempted in the legislation proposed by the Commission!

Actual results from this boycott are already evident. Certain manufacturing concerns have announced their intention to comply with these retail requirements; leases of certain buildings have been cancelled, and there exists little doubt but that, by the date established, the retail district will be abandoned by these wholesale concerns; while it would seem more than likely that this exodus would be followed by the removal of other wholesale interests to locations outside the proscribed section.

Its physical reactions upon the city of New York will be twofold: First, an immense number of "loft buildings" on side streets will be vacated, for which it will be necessary to find new light industries or professional men for their tenants. This occupancy may, in the first case, also produce new types of nuisances, which may in turn have to be eliminated by later legislation or boycott action.

Second, this condition must indubitably bring about a new, and almost an immediate, development of property now outside this district or below 23rd Street, where these trades will have to find necessary and available manufacturing areas ready for occupancy within a rather limited amount of time. This should bring about a new and better type of building development for lower New York, such as should in turn again go far to restore and stabilize the growth of real-estate values in the "blighted" district between the financial section near the tip of the island and 23rd Street, or, below 42nd Street, at either side of the proscribed retail area. Therefore this new zoning legislation can most certainly be considered as having been adopted just in time.

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THE particular situation resulting in New York City from a lack of intelligent foresight in arranging the city plan, finally, a couple of years ago, forced the adoption of most heroic measures. The dire need was meanwhile illuminatingly illustrated by the public combination of such rival concerns as Lord & Taylor, Macy, Stern Bros., Gimbel, Hollander, Altman, Bon Wit Teller & Co., and others, who joined in a movement to "save New York" "from unnatural and unnecessary crowding, from depopulated sections, from being a City unbeautiful, from high rents, from excessive and illy distributed taxation"—which highly unconstitutional combination in restraint of certain kinds of trade was heralded by full-page advertisements in the New York daily papers early in March, 1916.

The salvation they primarily desired was to prevent "the erection of factories in the residential and famous retail sections of New York." The condition they were striving to correct had come inevitably from the arrangement of the city plan, and its consequent enforced and unequal real-estate development. The surface traffic north and south, confined between the elevated lines on Third and Sixth Avenues, naturally carried with it abnormal development along Fifth Avenue. As fast as the old dwellings of the long "dead" blocks each side of Fifth Avenue were diverted from their original use by the gradual spread of business up the peninsula, much property was left in a condition immediately available only for cheap boarding-houses or unimproved business purposes; property that — judged by (and, generally, assessed like!) its near-by neighbors on the prosperous longitudinal avenue thoroughfare — was far too valuable to lie fallow and unimproved, while there apparently existed no genuine demand for its proper improvement.

On the other hand, once these narrow lots were built up with new high buildings, it became necessary to find some new purpose to which they could be put, and consequently a new and entirely *artificial* demand was finally inaugurated to bring these structures to serve manufacturing purposes. The result was a huge growth of these so-called "loft buildings," which absorbed the cloak and suit and waist-making businesses. The horde of cheap foreign labor necessary to these trades flooded into this section in the early morning hours and out again at night. Lower Fifth Avenue during the noon hour presented such an impassable glut of foreign-born humanity — dirt-begrimed, ill-kempt, speaking only their foreign idioms — that finally patrons of the best stores were driven from that portion of the Avenue centering around Madison Square and extending up nearly to 30th Street.

Substantially all those concerns that cater to the more fashionable trade had been forced out of lower Fifth Avenue to the region above 33rd Street, and there they were again becoming seriously threatened by the slow-moving infiltration of loft construction that had steadily kept abreast of, or had even actually accompanied, them uptown on all the side streets just off the Avenue. Therefore the dozen or more firms signing the advertisement announced that after February 1, 1917, along with other retail firms invited to join them, they would "give the concerns in our purchases of suits, cloaks, furs, clothing, petticoats, etc., the commission whose manufacturing plants are located outside of a zone bounded by the outer side of 33rd Street, 59th Street, Third and Seventh Avenues, and also including 32nd and 33rd Streets from Sixth to Seventh Avenue."

There can be no question but that this warning was a necessary and a salutary one, though merely another illustration of how we Americans strive to lock hangar doors after our airplanes have been abstracted! The vital ills arising from the maladjustment of realty and tax values in New York could all have been avoided if either a proper height limitation restriction had been imposed, or perhaps — better still — the zoning system, common in the development of all municipalities abroad, had been adopted in time. Another tragedy of the "might have been"!

A DOCTRINE ON THE CITY PLAN

THE *science of City Planning* may either search for and analyze those conditions which have previously combined to bring a city's development to its present condition, and then — like the surgeon — endeavor to correct or remove them, so that it can be once more restored to its normal healthy directions of growth; or it can concern itself merely with the existing situation, by endeavoring to make the best of it, and from present conditions deduce and prepare somewhat to guide or direct its probable future methods of growth. Both are equally uncertain as to result. The former requires perhaps the longer study and more expert knowledge of local conditions; the latter is perhaps the process easier and more natural to an expert brought in to study the situation and report from outside.

The art of City Planning is most directly concerned with an ability to so analyze the problem as to determine, and then to make the most of, those peculiar and distinctive qualities — either of geography, occupation, or commerce — which, when developed, will tend to make each separate and individual city the most distinctive example of its kind — and at the same time as different as possible from others of its general size, topography, and type.

So far as they may be available of utilization for a proper park system, every community presents many and various opportunities inherent in the site; so far as a comprehension and understanding of its business development is required, a greater and more expert knowledge and intuition is necessary; but to develop *the whole community* to its *best* individuality demands the highest ingenuity and art on the part of the advising expert on the city plan!

ONE of the unnecessary corollaries of city planning progress in America is the tendency to express studies for new "Civic Centers" in the conventional and often meaningless architectural forms derived from the *Ecole des Beaux-Arts* in Paris. Obviously adapted to broad and facile expression at the grandiloquent scale of many of these new projects, they are generally entirely lacking in any particular appropriateness to either city or site. The inevitable result of this tendency, if persisted in, will tend to make all our American cities regrettably similar in character of expression. In the case of our western cities, especially, the last thing these really American communities consciously desire would be to appear to ape in aspect their eastern neighbors. They would far prefer to preserve their individuality. This custom will too readily spread through American cities, where all too small a minority can be depended upon to separate "form from function," and so resist this insidious germ! — a fashion for believing the "Paris sort of caper" to be the acceptedly ultimate and proper *mode* for "City Planning."

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Industrial Housing and Efficiency

WITH so much to be done — and with time such a vital factor — it is quite likely that speed will dictate the kind of construction in industrial housing in the immediate future. Other factors will be sacrificed to this prime necessity.

The first need is for physical comfort and protection from the elements; but wherever possible the aesthetic — yes, the spiritual side — should not be lost sight of. The finer aspirations should not be stultified by depressing surroundings. And it cannot be denied that many of the older housing projects have a distinctly depressing atmosphere.

Housing developments have in the past been directed largely by engineers and factory superintendents who did not understand the direct bearing of living conditions on industrial efficiency. Now that this work has been largely placed in the hands of architects it is only to be expected that the subject will be treated with a wider understanding and intelligence.

The architect knows that the aim of democracy is the fullest development of the individual, mentally, morally, and spiritually. He knows the tremendous influence of environment on that development.

Obvious sameness in design, monotony of materials, cramped surroundings, allow no possibilities for the expression of individuality, nor for its development. They breed discontent, arrest initiative, and lessen efficiency. American labor can attain maximum production only under conditions that stimulate independence, self-respect, and ambition.

It can only be a matter of time until this fact becomes more generally recognized — until manufacturers will be willing to use more permanent and aesthetic materials in their housing projects.

The managers of our branch offices are at all times ready to co-operate with architects — to acquaint them with our facilities for serving them in industrial housing projects — and to give them the benefit of their expert counsel in connection with the materials we manufacture.

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The Architectural Review

Volume VI (Old Series, Vol. XXIII) May, 1918 Number 5

The Architectural Review $1,000 American Traveling Scholarship

The Report of the Scholarship Committee

March 25, 1918.

To The Architectural Review.
Dear Sirs:

The Committee for the Architectural Review American Traveling Scholarship beg to state that, after careful examination of the drawings submitted, they have finally awarded the prize to the drawings marked "Naumkeag." On opening the envelope, it appears that the author of these drawings is Mr. Frederic Hutchinson Porter, 4 Mason Street, Salem, Mass.

Had there been a second prize, it would have been awarded to "Opus," Mr. Benjamin Braunstein, 477 Fifth Avenue, New York City. The Committee suggest that his drawing be published as well as the successful one, and if it is thought wise to publish one other, it should be that marked "The Spirit of '76," by Carl C. Tallman, 17 Dill Street, Auburn, N. Y.

Charles A. Platt, *Chairman*
William A. Boring
William Adams Delano
Wm. Mitchell Kendall
John Russell Pope

A Brief Summary of the Scholarship and the Competition

The Purpose of the Scholarship

The Architectural Review, representing the donor of this new $1,000 American Traveling Scholarship, requested a committee of architects, consisting of Charles A. Platt, Chairman; William A. Boring, William Adams Delano, Wm. Mitchell Kendall, and John Russell Pope, to select an American Traveling Scholar by means of the competition here described. It was hoped to make this a means toward better appreciating our local historical American architecture by arousing renewed interest in the study of existing buildings of that period and their history. It was also expected to obtain by this means some new and valuable architectural material which could then be published for the profession, in order thus to spread the knowledge obtained so as to further better and improve the modern domestic architecture of North America.

If the material disclosed by the researches of the present scholar, who has already selected and started upon a survey of the northeastern portions of the State of Maine, produces the anticipated results, it is the hope and desire of all those concerned to continue the scholarship in future years, and so by this means eventually obtain the first really *comprehensive* and *complete* architectural record of the existing historical architecture of this fast disappearing, yet important, period; a record that we believe to be essential to the proper regional growth of our American architecture, already unfortunately too long delayed.

The Architectural Review has therefore gladly given its assistance in this purpose, as it recognizes a part of its function to be concerned with the spread of such information as may thus be obtained to the architects of America — and so it feels this coöperation with the donor of the scholarship to be both a privilege and an opportunity to serve the best purposes of the profession. So far as can now be foreseen, it may even eventually develop into the means for at last providing *the* definitive work on the Early Architecture of the United States, which has not yet been even foreshadowed in any of the aggregations of miscellaneous and scattered drawings and pictures of general or local groupings that have thus far been published.

The Scholarship Competition

The Competition held to select an American Traveling Scholar was planned first to disclose both his knowledge of Colonial styles and his sense of composition and draughtsmanship, as they would be required in designing and delineating a Colonial dwelling-house five bays wide on its principal elevation, besides showing a principal drawing-room interior; arranged — along with characteristic portions of the exterior and interior details and a small explanatory key-plan — upon a single sheet.

Each competitor was also required to submit a measured drawing or drawings of a façade, or an important architectural detail of an historical example of local architecture, in regard to the exposition of which he was left as free as possible, in order to give him every opportunity to show his abilities along the exact lines of the work for which he was being selected by the Competition. A report stating the known historical and architectural facts in regard to the example selected for his drawing, accompanied by some photograph or photographs, taken by the competitor, of this or other architectural subjects, was also required to show his ability along these supplemental lines.

Some sixty or seventy applications for registrations were received, but only a small proportion of that number completed their registration and entered the final Competition; and the following pages and plates of this issue contain a selection of the best and most interesting architectural material obtained from these contestants.

The successful scholar is to give the months of May to September, inclusive, to an architectural survey of a selected district; and the month of October to completing his measured drawings, and those sketches which may be selected by the Scholarship Committee from among the material his exploration discloses, as well as the finishing of his written report. This finished product of the scholarship, along with a selection of the "ad interim" work which may be received from month to month, will be given to the profession through publication in the text or plate pages of The Architectural Review, as it becomes available, from time to time, during the remainder of this year.

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The "Pineapple House," Salem, Mass.

Report Accompanying Measured Drawing Submitted by Frederic Hutchinson Porter

As this article is being set into type the Secretary of the Essex Institute has notified Mr. Porter that the old pilasters belonging to the Pineapple doorway have just been discovered in the basement of their building. They are now being set up on the wall and painted, but as the original door has not yet been found, an old door has been substituted in its place. In measuring the pilasters and base, and checking with his conjectural drawing, Mr. Porter discovers that his restoration was substantially correct, with the exception that the base has actually about one-fourth inch more projection than he had shown.—Ed.

ONE of the best existing instances of the gambrel-roofed house is the so-called "Pineapple House" of Salem. It is situated in Brown Street Court, formerly called Ives Court, and not far distant from the junction of Brown Street with Washington Square, whereon still stand many of Salem's famous type of "square three-story" houses, which followed the gambrel-roofed type, and prevailed — some in brick and some in wood — during the second commercial era of Salem's prosperity.

Before the section about it was very much built up the Pineapple House formerly faced on Brown Street, but it is now almost hidden from public view, and, indeed, located so close to the sidewalk and opposite fence that a full and satisfactory view of the front cannot at present be had.

This façade is fairly well proportioned and pleasing, however, and so well balanced that at first glance the fact that it is not symmetrical is not apparent. Were it better situated, the house might receive as much consideration from this fact as does the doorway, which, previous to its removal to the Essex Institute Museum, in 1911, was much photographed and sketched, but to the best of my knowledge never before measured or published.

The frame of the original house was brought from England as early as 1740 — as was also the doorway and the surmounting pineapple, carved in wood, from which the house derives its name — by Capt. Thomas Poynton, in his own ship. The wooden pineapple was kept highly gilded in the time of Mrs. Poynton, known to all as "Aunt Poynton," for every year she had it regilded to equal in brightness the huge brass knocker, in the form of the head of a lion, which now unfortunately has disappeared. The significance of the pineapple has never been stated.

Captain Poynton was a Loyalist, and, when the Revolution came on, fled to England, where he died, in 1791.

A tradition in the family relates that his house was visited by a turbulent mob of patriots, to obtain a recantation of his obnoxious political sentiments; but he obstinately refused and the patriots finally withdrew. This visit may have been inspired by the fact that "Aunt Poynton kept her chimneys whitewashed" (Harriet R. W. Cooke's "History of the Driver Family"), a mark of Tory sympathies at that time.

Entrance, Richard Derby House, Salem, Mass.

Captain Poynton lived in the house from 1743 to 1775; and Hannah, his wife, lived in it until her death, in 1804. In the inventory of the Captain's will, probated in 1793, the house, with adjoining land, and a barn and store standing thereon, were valued at five hundred fifty pounds. Hannah left the house to Thomas Poynton Bancroft, the son of her grandniece, who was born in the house in 1798. Of him little information is to be found; but the records reveal that his father, Thomas Bancroft, was a prominent citizen, a clerk of courts, and in 1802 contributed, with such other celebrities as Elias Haskett Derby, William Prescott, Benjamin Pickman, Clifford Crowninshield, and Nathaniel Bowditch, to the fund for "the levelling of the Common."

The building is now much enlarged at the rear and is subdivided and used as a tenement house. It is owned by Robert H. and Ellen Bancroft, who presented the doorhead to the Essex Institute Museum for preservation. The pineapple is now painted orange and the leafage green. A plain wooden pediment and pilasters have been installed in its former place on the building, but all trace has been lost of that part of the original pilasters that formerly existed below the necking. The fluted pilasters shown on the measured drawing were reproduced from the photograph obtained by Mr. Frank Cousins before their removal from the old house. That part of the doorway that is still left to to us remains in very good condition, and, excepting for the slight loss of sharpness, due to many superposed coats of paint, still charms the eye as it must have done in the days of '76.

Old Doorway of Pineapple House, Salem, Mass.
(From a photograph taken by Mr. Frank Cousins before its removal to the Essex Institute)

Old Maryland and Virginia Farms

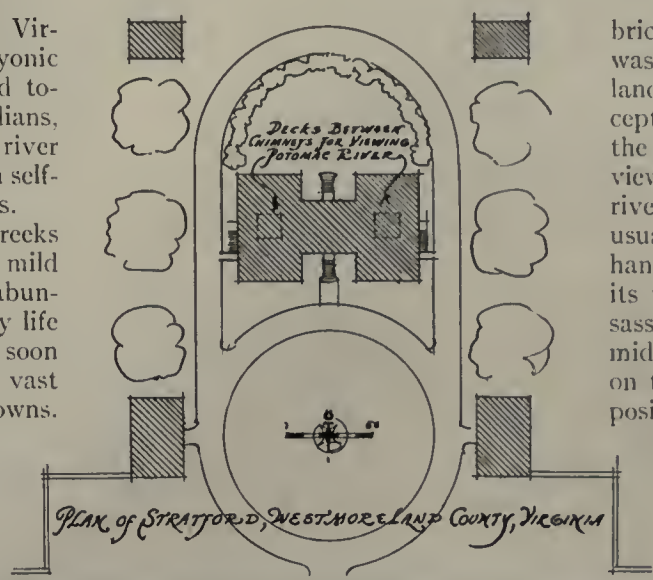
By Addison F. Worthington

MARYLAND'S settlers, like Virginia's, soon left the embryonic towns where they had huddled together for protection against the Indians, and spread themselves out along the river banks to become growers of tobacco on self-contained and self-supporting farms.

Innumerable salt and fresh water creeks gave them communication, and the mild and healthy climate, fertile soil, and abundant game all tended to make country life endurable and attractive. Neighbors soon became connected by marriage, and vast family communities took the place of towns.

Long before, in the rural neighborhoods of England, the problem of living happily had been worked out for them, was brought over and kept against the touch of time and social revolution, until Marylanders and Virginians seemed like older Englishmen. The life everywhere was the life of the family, and this it was that produced that intense attachment to the soil. If we describe the easy and deliberate life of the landed manor, the feudal patriarch mildly ruling everybody in sight, we will have given on a large scale the life of the smaller plantation.

The typical farm fronted for say a mile along a navigable river that teemed with fish and waterfowl, ran back between creeks, first over meadow-land then over gently rolling fields of tobacco and corn, and on to wooded slopes where the creeks had their sources and where game was most plentiful. The brick house, with its low wings, steep roofs, and tall chimneys (some of the more primitive houses were of frame, with brick only in the chimneys or gable ends), was placed on the first slope up from the low land, midway between the creeks, and, except for a row of sentinel-like tulip trees on the terrace, thus possessed an unobstructed view of its own and neighbors' sails on the river. The road up from the landing was usually kept out of sight, behind the right-hand or left-hand rail fence, which wormed its way out to the water through cedars, sassafras, and dogwoods, and separated the middle and side pastures. The approach on the inland side was often along an imposing avenue of old tulips, oaks, or locusts — a direct driveway from the "big road" straight through the farm to a sort of forecourt (the "yard") formed by the house, its wings, various outbuildings, and, across the front, a white paling fence, a brick wall, or a ha-ha.



"Stratford," Westmoreland County, Virginia

Barnyard on a Maryland Manor

This yard was the working center, as well as about the geographical center, of the whole place, and around it were grouped half the buildings of the farm. Nearest the house came the office, the kitchen (in Maryland these were apt to be in the attached wings of the house), the smoke-house, the ice-house, the dairy, and the tool-house; then, a little further away, the overseer's house, the slave quarters, the stables, the forge, the pens, the poultry-houses, the pigeon-house, and the feed-houses; and still further away, scattered throughout the farm, were various barns and hay barracks.

Sometimes there was a spinning-house near the dwelling, sometimes a little school-house; and often, in the Catholic sections of Maryland, a chapel. Nearly always there

Slave Quarters on a Maryland Manor

Slave Quarters and Shops on a Maryland Manor

Hunting Lodge on a Maryland Manor

A Virginia Farmhouse near Mobjack Bay

Interior of a Maryland Farmhouse

Farmhouse on St. Mary's River, Maryland

Schoolhouse on a Maryland Farm

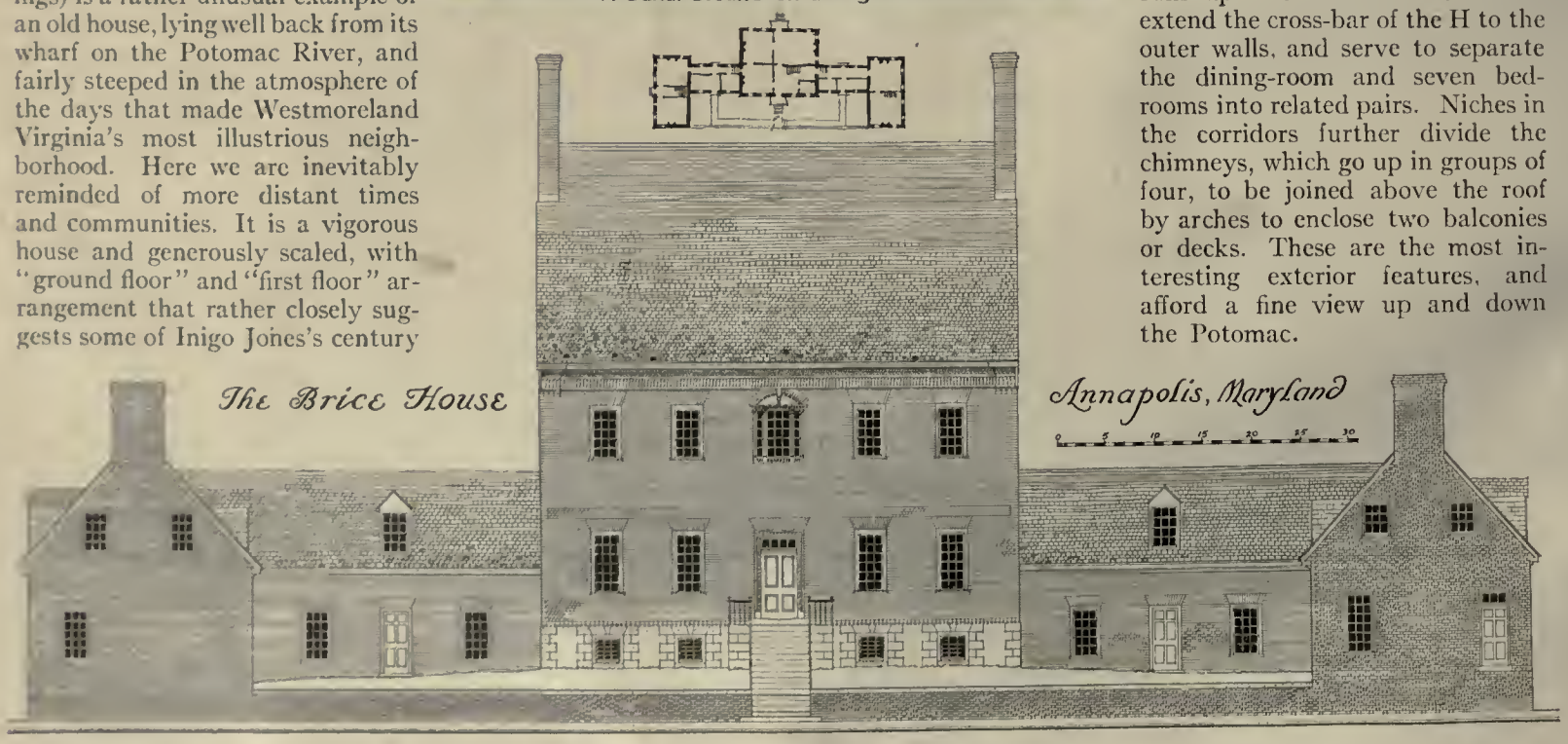
Gravestone on a Maryland Farm

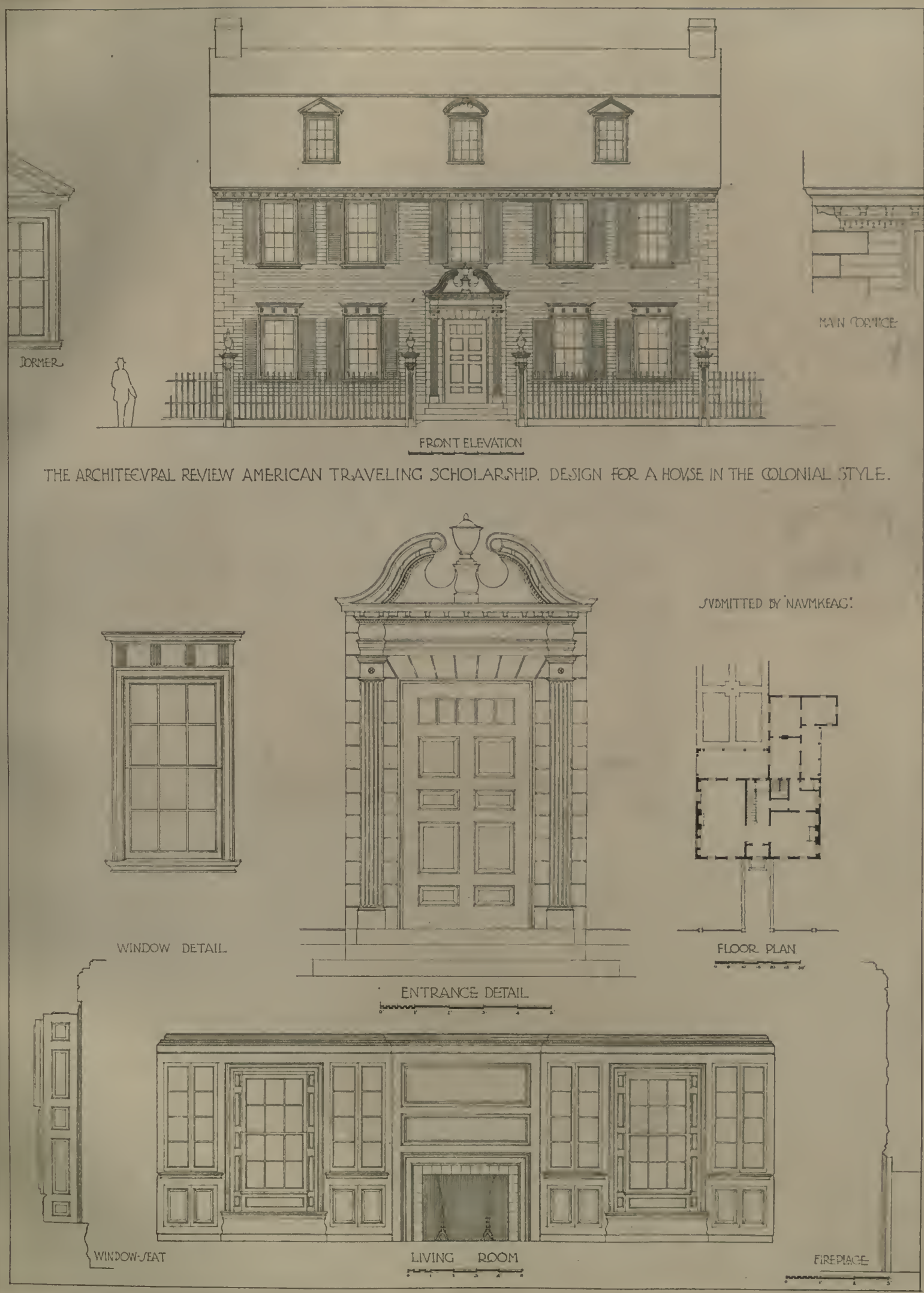
A Burial-Ground on a Virginia Farm

was a family burying-ground,— off somewhere beyond the flower-garden,— and in it tombstones of excellent quality. No accessory about the farm, no detail, was so unimportant or small that it did not receive worthy attention.

"Stratford" (shown here with only the most intimately grouped of its neglected and ramifying outbuildings) is a rather unusual example of an old house, lying well back from its wharf on the Potomac River, and fairly steeped in the atmosphere of the days that made Westmoreland Virginia's most illustrious neighborhood. Here we are inevitably reminded of more distant times and communities. It is a vigorous house and generously scaled, with "ground floor" and "first floor" arrangement that rather closely suggests some of Inigo Jones's century older solutions devised for his country clients.

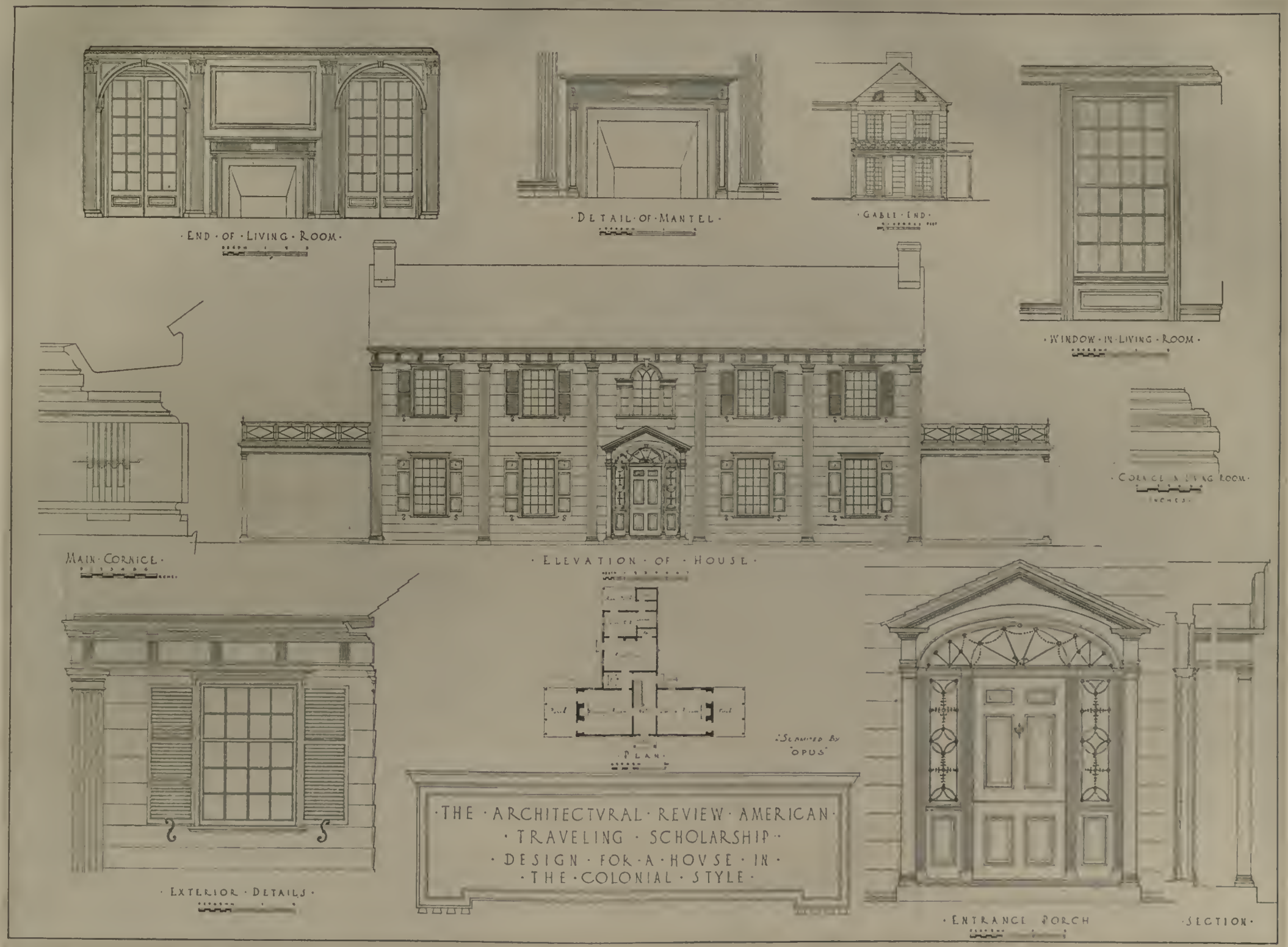
The ground floor of the H-shaped plan is taken up with numerous minor rooms, only a step above the grass level, and is, architecturally, of little interest. The main floor contains a large, Corinthian pilastered hall, which takes up the square, central part of the H and runs up into the roof. Corridors extend the cross-bar of the H to the outer walls, and serve to separate the dining-room and seven bedrooms into related pairs. Niches in the corridors further divide the chimneys, which go up in groups of four, to be joined above the roof by arches to enclose two balconies or decks. These are the most interesting exterior features, and afford a fine view up and down the Potomac.





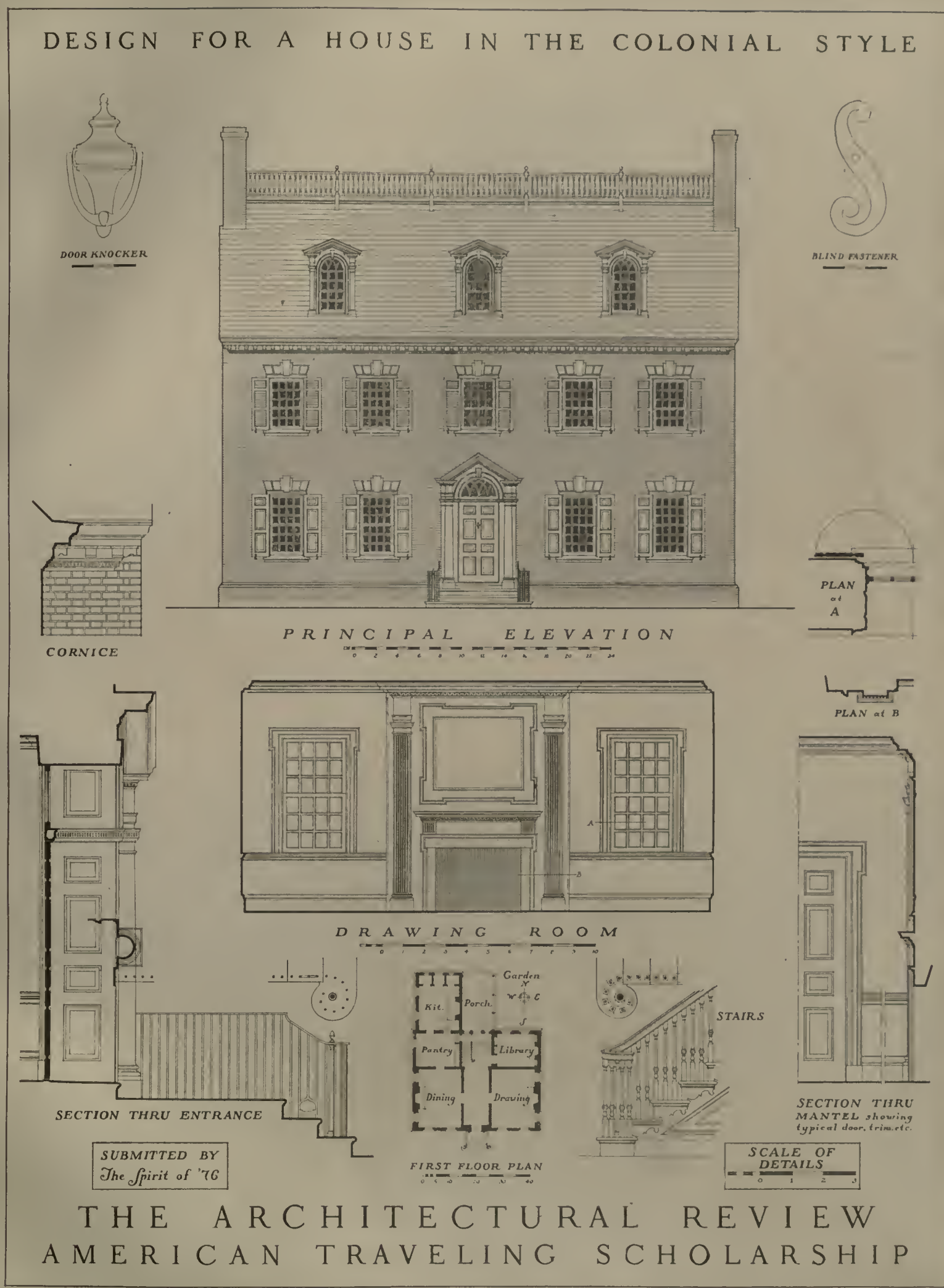
COLONIAL HOUSE DESIGN AWARDED THE ARCHITECTURAL REVIEW AMERICAN TRAVELING SCHOLARSHIP, 1918

SUBMITTED BY FREDERIC HUTCHINSON PORTER, SALEM, MASS.



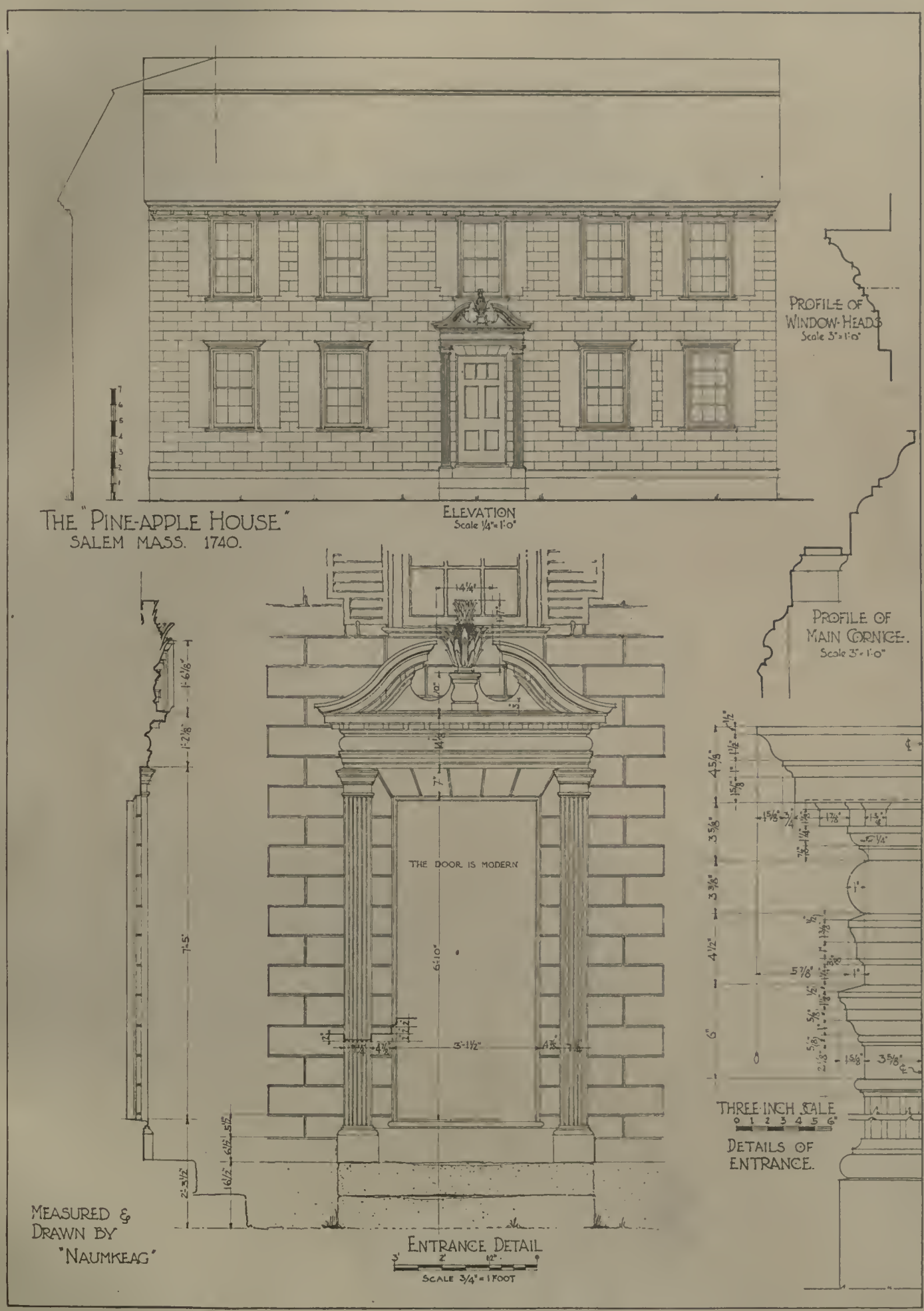
COLONIAL HOUSE DESIGN, IN COMPETITION FOR THE ARCHITECTURAL REVIEW AMERICAN TRAVELING SCHOLARSHIP, 1918

SUBMITTED BY BENJAMIN BRAUNSTEIN, NEW YORK CITY



COLONIAL HOUSE DESIGN, IN COMPETITION FOR THE ARCHITECTURAL REVIEW AMERICAN TRAVELING SCHOLARSHIP, 1918

SUBMITTED BY CARL C. TALLMAN, AUBURN, N. Y.



MEASURED DRAWING OF THE PINEAPPLE HOUSE DOORWAY, SALEM, MASS.

AWARDED THE ARCHITECTURAL REVIEW AMERICAN TRAVELING SCHOLARSHIP, 1918

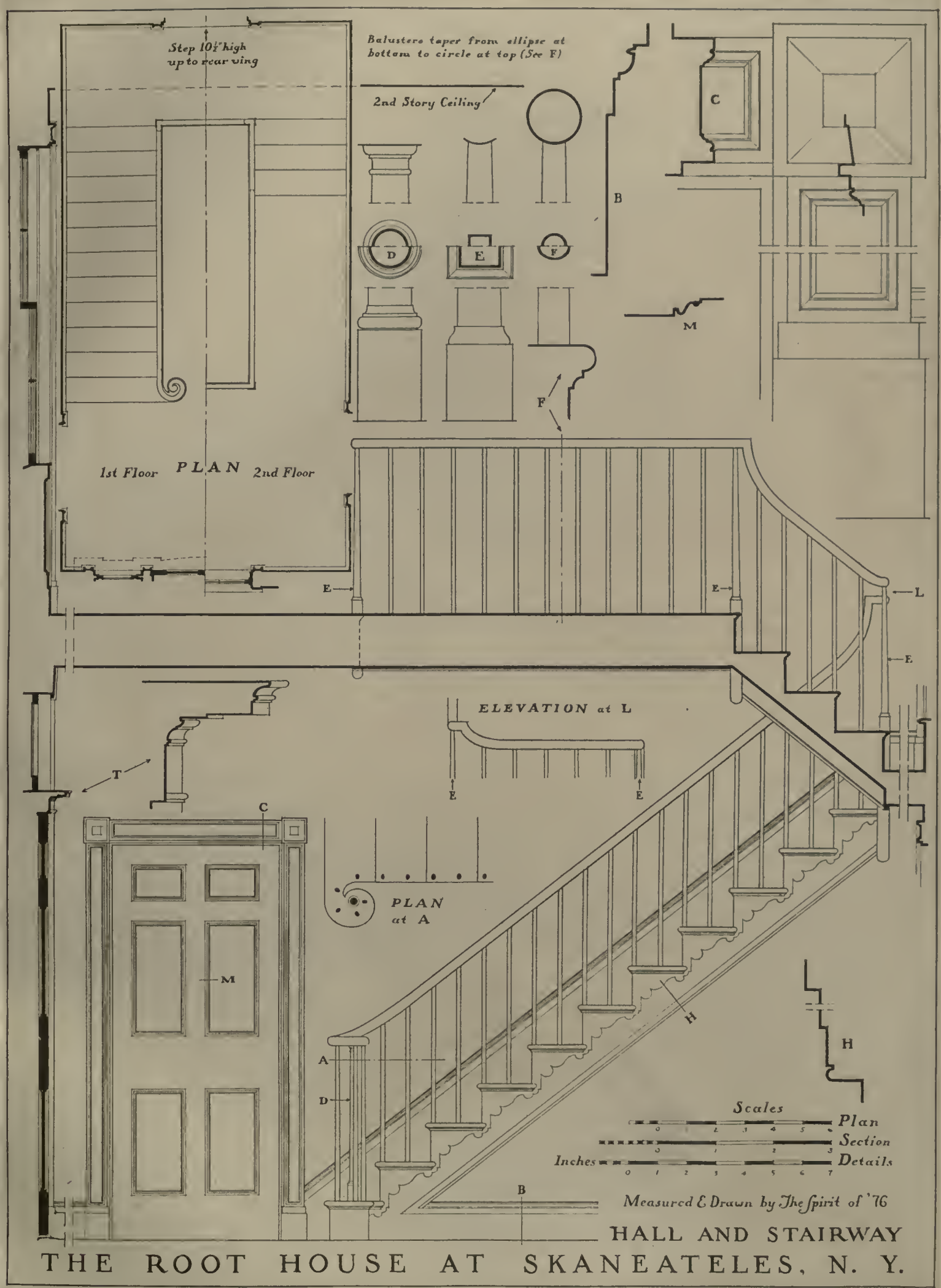
SUBMITTED BY FREDERIC HUTCHINSON PORTER, SALEM, MASS.

ENTRANCE PORCH AND DOORWAY
THE ROOT HOUSE AT SKANEATELES, N. Y.

DETAILS OF ENTRANCE PORCH AND DOORWAY, ROOT HOUSE, SKANEATELES, N. Y.

SUBMITTED IN COMPETITION FOR THE ARCHITECTURAL REVIEW AMERICAN TRAVELING SCHOLARSHIP, 1918

MEASURED DRAWING BY CARL C. TALLMAN, AUBURN, N. Y.



DETAILS OF HALL AND STAIRCASE, ROOT HOUSE, SKANEATELES, N. Y.

SUBMITTED IN COMPETITION FOR THE ARCHITECTURAL REVIEW AMERICAN TRAVELING SCHOLARSHIP, 1918

MEASURED DRAWING BY CARL C. TALLMAN, AUBURN, N. Y.

GENERAL VIEW

FIRST BAPTIST CHURCH, FRAMINGHAM CENTER, MASS.

BUILT IN 1826

THE ARCHITECTURAL REVIEW

THE ARCHITECTURAL REVIEW

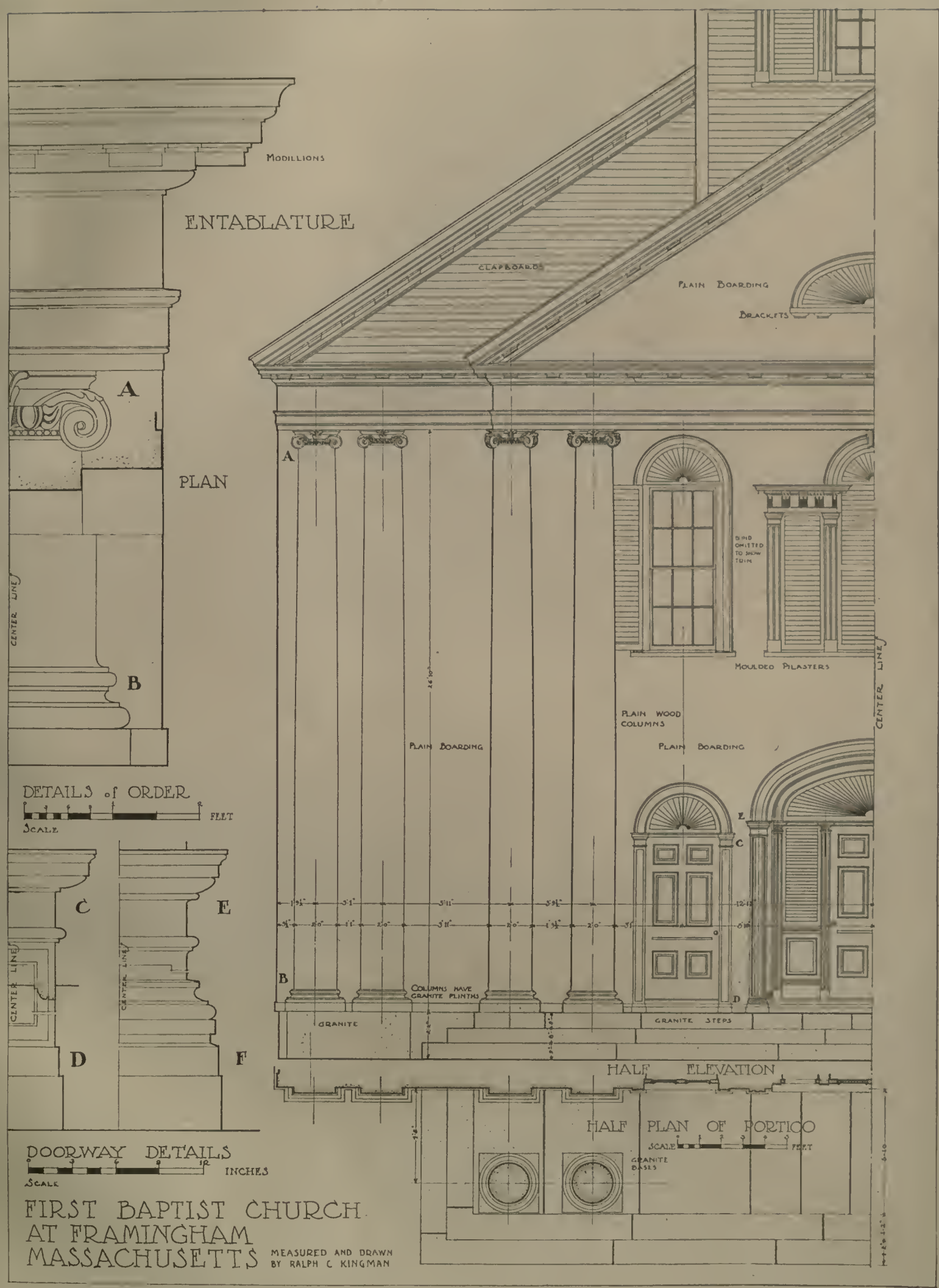
DETAIL OF PEDIMENT AND PORCH AT ENTRANCE
FIRST BAPTIST CHURCH, FRAMINGHAM CENTER, MASS.
BUILT IN 1826

FRONT ELEVATION

FIRST BAPTIST CHURCH AT FRAMINGHAM MASSACHUSETTS

SCALE FEET

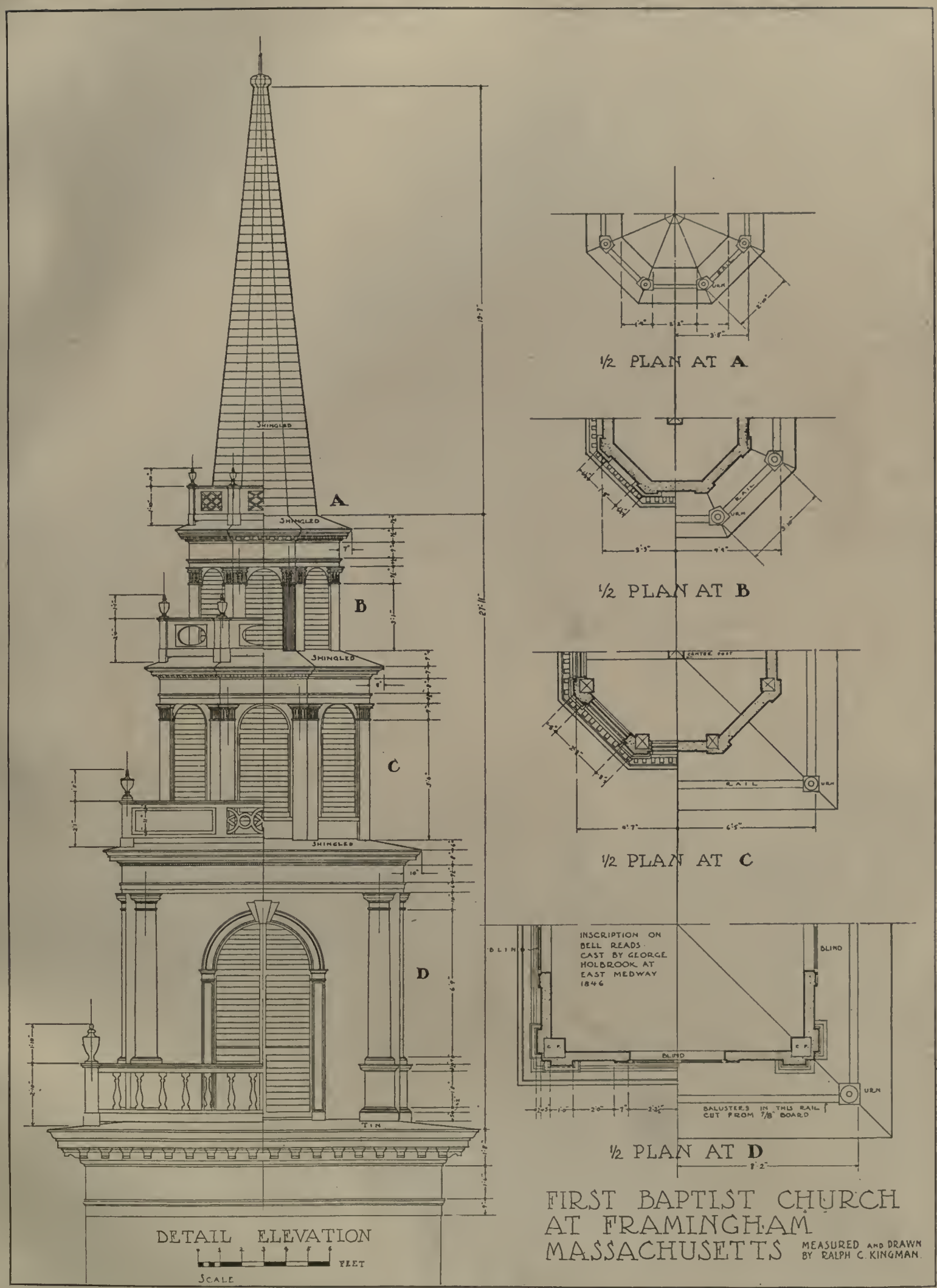
MEASURED AND DRAWN BY RALPH C. KINGMAN



FIRST BAPTIST CHURCH
AT FRAMINGHAM
MASSACHUSETTS

MEASURED AND DRAWN BY RALPH C KINGMAN

MEASURED DETAILS OF PORTICO AND FRONT ELEVATION
FIRST BAPTIST CHURCH, FRAMINGHAM CENTER, MASS.
BUILT IN 1826



MEASURED DETAILS OF SPIRE

FIRST BAPTIST CHURCH, FRAMINGHAM CENTER, MASS.

BUILT IN 1826

FIRST PRESBYTERIAN CHURCH, AUBURN, N. Y. PLATE LXIII

Reproduced from an old photograph in the possession of the Cuyaga County Historical Society.

BUILT IN 1816, TORN DOWN, 1869

THE ARCHITECTURAL REVIEW

THE ARCHITECTURAL REVIEW

EXTERIOR
CONGREGATIONAL CHURCH, BERLIN, MASS.
BUILT IN 1826

PLATE LXXII

GENERAL VIEW

TOWER AND GABLE

ENTRANCE PORCH

PLATE CIV

THE ARCHITECTURAL REVIEW

ST. JOHN'S CHURCH, EPPING, ENGLAND

BODLEY & GARNER, ARCHITECTS

CHANCEL SCREEN

VIEW IN CHANCEL

PLATE CV

THE ARCHITECTURAL REVIEW

ST. JOHN'S CHURCH, EPPING, ENGLAND

BODLEY & GARNER, ARCHITECTS

GENERAL VIEW

SERVICE SIDE

PLATE CLVI

HOUSE FOR W. H. KUCHLI, ESQ., DULUTH, MINN.

ARTHUR N. STARIN, ARCHITECT.

THE ARCHITECTURAL REVIEW

LIVING ROOM

STAIRCASE HALL

DINING ROOM

HOUSE FOR W. H. KUCHLI, ESQ., DULUTH, MINN.

ARTHUR N. STARIN, ARCHITECT

EXTERIOR
OLD COURT HOUSE, BRISTOL, R. I.

THE ARCHITECTURAL REVIEW

EXTERIOR
THE OLD SALTONSTALL HOUSE, HAVERHILL, MASS.
BUILT IN 1788

The Colonial Architecture of Central New York

The Root House at Skaneateles, Onondaga County

By Carl C. Tallman

IN studying the early buildings of Central New York it is well to remember that when the settlements nearer tide-water were well-established communities, this region was still a vast wilderness; and except for its eastern section along the Mohawk, it remained unsettled until about 1790. Sullivan's expedition in 1770 was in a measure the forerunner of the first settlements, as many of the soldiers were greatly impressed by the beauty of the country near the finger lakes, and they returned to tell many tales of its possibilities as a new and productive territory. As the towns began to be settled, some twelve to twenty years later, the first buildings were very crude; and not until transportation facilities began to be improved, after 1800, did the buildings take on any semblance of architectural design. Even at a later time the buildings continued to show a greater simplicity than the New England and Eastern New York work, from which the builders mostly received their inspiration. Generally the only details which were given any special ornamentation were entrances, stairways, and mantelpieces; but occasionally exterior cornices were ornamented, and sometimes the bare façades were relieved by pilaster treatment. Interior cornices and wainscoting were almost never used.

View of Root House from the South

The remains of Colonial work in this section, as compared to those in the older and more thickly settled communities nearer the coast, will be found to be scattered over a considerable territory. Some of the most interesting examples are not always apparent, from exterior appearance, even to the careful student of architecture. This is true particularly in the cities, where commerce and later progress have almost obliterated the old structures; but occasionally one will find the old-time atmosphere partially maintained in some of the more remote villages, whose growth during the past century has been comparatively very slight. The field will be found fertile, indeed, if one is patient in seeking the facts of the early history of each settlement. In many cases, where the original buildings have been mutilated by later changes, it is still possible to supplement the information obtainable from the buildings themselves by old photographs or drawings. It is a remarkable situation that the material in this region has not been covered to any extent in any work of Colonial research.

Detail of Entrance Doorway

East End, Showing Two-Story Porch

The writer has been fortunate in having covered Central New York quite thoroughly by motor, and seldom does a trip result in the failure to discover some hitherto unknown but architecturally interesting old building. For extensive research the field available from Auburn as a center could easily reach from Batavia to Schenectady and from Lake Ontario to the Southern tier. Rochester, Canandaigua, Geneva, and a few other places scattered here and there, have been treated in previous publications; but the remaining territory still offers a wealth of material which should be recorded before it has passed into decay, or fallen a prey to the incessant and increasing advances of modern construction.

The Root house at Skaneateles is a typical example of the early architecture of this section. While it is possible to find numerous houses, churches, and other buildings of delightful and varied Colonial design, which possess greater interest historically, it has seemed to the writer that this house is worthy of selection to illustrate in a general way the type of material to be found in this part of the State. Standing at the end of the village street, amidst a sheltering grove of trees, it presents an appearance that is both dignified and suggestive of the early days of the village. Present-day historians do not seem to have a record of the date of its construction, but the following quotation, taken from Leslie's "Skaneateles," is of interest: "Peter Thompson and John Billings, both carpenters, constructed many of the prominent and best dwelling-houses in the village and surrounding country during their time, one of which was James A. Root's present residence. This house was built for Nicholas Thorne, who owned the property." Mr. Thorne did a good deal in real estate, but his affairs later became somewhat involved. He died in 1832, and in 1834 the house was sold under mortgage foreclosure to James Cannings Fuller ("British" Fuller), who died in 1847. His cognomen distinguished him from his near neighbor, William, or "Yankee" Fuller. Mr. Fuller was a prominent and active Abolitionist, and the house therefore became well known. After his death the property passed into the hands of the Root family, and as Mr. Root also was a strong Abolitionist, the house became even more a hospitable place

Detail, East Porch Column

for notable men of that class, men such as Honorable Charles Sumner, Cassius M. Clay, and some of the unfortunate victims of actual slavery. Within the past few months the property has been sold to a Syracuse family by Mr. Root's heirs.

The entrance motive, as shown by the detail photograph and measured drawing, hardly needs a word of appreciation, as its charm of mass and delicacy of detail are apparent. The treatment of the porch, projecting about four feet in front of the doorway, an unusual feature in houses of this location and period, is masterly — its slender columns and extraordinary balustrade producing an exceptionally pleasing effect. It was necessary a few years ago to make certain repairs upon the free-standing columns, and this accordingly accounts for the bead around the shafts and the blocky capitals — which are not in accordance with the original details shown by the engaged columns. The shutter door, in front of the original solid door, is also not a part of the original design. The two-story east porch is also worthy of study — the proportions of its columns, the detail of their bases, and the balustrade detail recalling the entrance-porch treatment and producing a homogeneous effect that is only marred by the crudely devised and naive composite capitals.

It is most regrettable and unfortunate that extensive interior alterations, affecting also the exterior of the rear wing, were made about forty to fifty years ago; but by using one's imagination it is still possible to picture the simple old interiors, with their delicately detailed mantels and decorative treatment in accordance with the style of the period. The hall and stairway woodwork, and some of the doors and trim in the other rooms, remain undisturbed; otherwise the interiors are indeed doleful, with their Victorian mantels, wall-paper, and carpets. It is hoped the new owners will allow their architect to restore the interiors and the rear wing to as near their original appearance as it is possible to conjecture them.

The Staircase

This quotation, from Leslie's "Skaneateles," contributes a quaintly human touch.

"General Lafayette's Visit to Skaneateles.— William E. Thorne, who is the son of Nicholas Thorne, deceased, who owned the James A. Root place, and who erected the dwelling house thereon, in a recent letter to a friend here (the author) thus relates a little early history:

" 'As we grow older how much interest we feel toward those we mingled with in childhood and youth, and the value we place upon relics of the past! Lately the upper part of one of mother's china candlesticks was chipped off, causing me to say painfully, "Gracious!" That pair of candlesticks was used, and quantities of tallow candles, to illuminate our home in Skaneateles in 1824 in honor of General Lafayette, on the occasion of his return to New York City from a visit through the West. The West in those days was very limited in extent. Coming from Auburn, and seeing from the brow of the hill our house illuminated with tallow candles in every window, the stage-coach was driven up to our gate. The General opened the coach-door and saluted us, waving his handkerchief as the coach drove to the village, which was wholly illuminated with glittering tallow candles. That was a grand occasion, and it made a lasting impression upon my childhood days. I was then about seven years old, and it is very clear in my memory now.'"

The First Presbyterian Church, Auburn, N. Y.

The following quotation, from a letter written by Mr. Carl C. Tallman, after the Competition was held, is self-explanatory. We reprint it, along with the editorial to which Mr. Tallman refers, and one or two other minor comments from the contemporary press, for the interest it contains for our readers, in connection with the old view of the church itself, which is separately reproduced as a plate — in the New England Colonial Church Series section.— Ed.

"*In looking up material for the Architectural Review Scholarship Competition at the rooms of the Cayuga County Historical Society, I came across an editorial on the First Presbyterian Church of this city which so appealed to me that I looked up and found an old photograph of the building. I am enclosing a copy of the editorial herewith, along with a print made from the old photograph — which was taken prior to 1870 — and a brief account of the building's history. It has occurred to me that you might desire to use this material as an example of what has been brought to light already as an incidental by-product of the Architectural Review American Scholarship Competition. Perhaps my feelings in the matter are affected by local pride (possibly mingled with shame for the deeds of our builders of 1870!), but it seems to me the church is one of the most pleasing examples of Colonial Church Architecture that I have ever seen.*"

Church at Pompey Hill, Onondaga County, N. Y.
Built in 1817

THE original First Presbyterian Church was built in 1816. Judging from one of the accompanying quotations, it was enlarged or extended previous to 1848. In 1869 the old wooden structure was torn down to make way for a new stone building in the then prevailing Gothic style. Fragments of the old building were removed to another site and incorporated into the building of Calvary Presbyterian Church, but in the utterly inappropriate manner that was thoroughly typical of the period — 1870.

Of the steeple only the lower, or Ionic, octagonal part remains; of the old front, only the capitals of the Corinthian pilasters and the round window-frame from the pediment exist in a recognizable form.

An editorial from the weekly newspaper, *The Advocate of the People*, by H. C. Southwick, published Wednesday, November 6, 1816, at Auburn, N. Y.

The New Presbyterian Church

"The new Church now completing in this Village, by the Presbyterian congregation, reflects high honor on its projectors and patrons, and is certainly a great ornament to the Village of Auburn. It is acknowledged by every stranger and traveller, with whom we have conversed, to be one of the most elegant buildings, as a Church, of any in this state. The great bell intended for this edifice, and which weighs about 1250 lbs. was on Saturday last, raised and hung in its proper position, without accident. The spot on which this stately pile now stands, and its surrounding country, was 22 or 23 years ago, covered with immense forests, whose inmost recesses resounded with the dismal yell of the savage, the howling of the wolf, and the common resort of the bird of night. We understand this building has been thoroughly viewed by the Hon. SIMEON DE WITT the Surveyor-General of this state, who pronounces it the best piece of architecture of the CORINTHIAN order, within his knowledge.

"The principal builder, we are informed, is Mr. LAWRENCE WHITE, formerly of New York, whose promptitude and skill in workmanship have done honor to his profession, and he certainly deserves the highest commendation, which an approving public can bestow.

"The only thing we regret is, that this elegant building could not have been placed on a higher eminence; but as it is, we sincerely wish it may become a place of general resort, at all times when opened for divine service and that the Congregation may have the felicity of procuring a PASTOR, who will be an ornament to his station and be the means of winning many souls to the cause of his 'DIVINE MASTER.'"

From *The Advocate of the People*, Wednesday, February 12, 1817.

"On Monday last, the Pews and Slips of the first Presbyterian meeting-house in this village were put up at Auction, and the sales of Pews, and 56 Slips amounted to 14,814 dollars. There are about one third of the slips below stairs remaining, unsold, and all in the gallery."

An article in *The Auburn Gazette*, of the same date as the above, states that the amount raised by the sale of pews and slips was within about $500 of the cost of the house.

The dedication, which was held Thursday, March 6, 1817, starting at 11 A.M., is reported at length in *The Auburn Gazette* of March 12, 1817. The services were conducted by the new pastor, Rev. Dirck C. Lansing.

Finally, the following item, referring to the Auburn First Presbyterian Church, is quoted from "The History of Western New York," by the Rev. James H. Hotchkin, published in 1848.

"The church has an appropriate house of worship, the erection of which was commenced in 1816, and completed the following spring. It has since been enlarged by the addition of several feet to its length, and is now seventy-two feet in length, by fifty-five in breadth. It is capable of comfortably seating about one thousand persons."

Contract-Specification Covering the Construction of the Old Saltonstall House, at Haverhill, Mass., Executed in 1788

This Indenture of Covenants & Agreements made on the 24th Day of July, one Thouſand, seven hundred & eighty eight between Nathaniel Saltonstall Esqr. & Moſes Marsh, Joyner, both of Haverhill, & Amos Carlton of Bradford, witneſseth—Whereas sd Saltonstall is about to build an Houſe in Haverhill between the Houſes of the Widows West & Mulliken—sd Houſe being 47 Feet in Length & 40 Feet in Width.—We sd Marsh & Carlton engage to board ourſelves & finish the whole of the Joyner's work of sd Houſe in a proper & workmanlike Manner, as ſhall be hereafter expreſsed & according to sd Saltonſtalls Directions.

The Houſe is to be boarded; the Boards to be featheredged; shingled & clapboarded, with an handſome walk on ye Top of the Houſe with turned Banisters; Gutters around the whole Houſe with handſome Spouts on front & back—Modillions on three Sides & ye back Part to be properly cornished according to Order & proper Mouldings under the Coving—plain corner Boards, cornished Crowns to the Windows—four outer Doors, also Cellar Doores inside & out—two plain Pediments—a Portico over the front Door ſimilar to Mr. John Whites—the two front Roomes to be sealed, with pannelled hanging Window Shutters or ſliding ones, as sd Saltonstall pleaſes—to be sealed as high as ye Windows or pannelled with Mouldings as uſual; to be pannelled acroſs the Fire place with proper Mouldings; & if sd Roomes are not ſealed, a Reduction is to be made from this Contract of twenty Shillings for each Room; sd Rooms to be double cornished & Cloſets on the Sides of the Chimney with Conveniences therein as desired by sd Saltonſtall. The Bed Room to be sealed as the front Roomes, single corniſhed, pannelled acroſs the Fire Place with Mouldings; sliding pannelled Window Shutters, unleſs sd Roomes should be ſealed; in that Case hanging ones are to be made; but if sd Room is sealed, an Allowance of twenty Shillings is to be made to sd Joyners jointly—Cloſets at ye Sides of the Chimney with Conveniences as deſired—The Kitchen is to be ceal'd, Dreſsers with Drawers under the ſame & a Cupboard—pannelled Doores to the Dreſsers & a Cloſet in ſome Part of the Kitchen if deſired & one over the Fire Place—also Window Shutters to all ye Kitchen Windows—The Chambers are to be ſingle cornished, handſome Mouldings around the Fire places with Cloſets on the Sides of the Chimney with Conveniences as deſired—sliding pannell'd Window Shutters to all the Chamber Windows—The Kitchen Chamber is to have a Partition acroſs with convenient Doores. The Garrett is to be divided & two lodging Chambers made with a Moulding around the Fire places & Cloſets around the ſame—a double Floor in the Garrett Chambers & a ſingle one in the Remainder of it—three Luthern Windows are to be in front of sd Houſe & properly leaded on the external Part—The Chambers & Garrett to be plastered over the Fire places—to make all the Cellar, Chamber & Garrett Stairs to ye top of the Houſe Scuttle, fix all the Pullies, Locks & Hinges & to fur down every Room & fix every Part of the Houſe for lathing. The Entry brackett Stairs, the lower Entry cealed, alſo the ſides of the front Stairs; double cornished as the front Roomes; the upper Entry single cornished; the Windows in the Entry to be the sd Brackett Stairs to be ramptd probable that some work is not particuht to be included in properly finishing ly belongs to the Joyners Work; sd promiſe & engage to do the ſame to fulfill this Contract & sd Saltonſtall, Marsh & Carlton mutually agree, that if there should be an Omiſsion of the Work as is herein described, that a proportional Allowance ſhall be made to sd Saltonſtall; & if any extraordinary work should be added an allowance is to be made to sd Joyners for ſuch additional Work. The Turning is not included in this Contract; but they are to fix the whole of the Banisters for the Turner—The Window Frames & Sashes are not included in this Contract except thoſe that belong to ye Cellar & over ye Entry & any other Doores where deſired—And the sd Nathaniel Saltonſtall Esqr. doth promiſe, covenant & engage to pay to sd Marsh & Carlton jointly, the Sum of one hundred & forty Pounds for compleating this Contract; also to furnish sd Marsh & Carlton with all proper Materials for sd Work delivered at sd Building in ſeaſonable Time, & sd Joyners engage to compleat the whole of sd Houſe on or before the first Day of July next ensuing.

This portion of the contract was lost when the signatures on the back of the sheet were torn out, on its completion.

And sd Saltonſtall engages to pay to each of sd Joyners twenty Pounds lawfull Money by November 1st. next ensuing, provided their Work amounts to ye Sum—also when the Houſe is finished, to make another payment to each of them, of twenty five Pounds & in three months after to pay the Remainder of what will be due to them—

N.B. The modillions on ye Back of ye Houſe are pd for

Teſt

David Marſh

Moſeſ Marſh

The Study of Colonial Architecture

Part III. Desirable Methods of Study

By Fiske Kimball

ALTHOUGH for the precise determination of many questions regarding the date and authorship of buildings the most laborious and minute research is necessary, yet for the avoidance of such grosser errors as have already been illustrated an observance of a few elementary critical methods and precautions will suffice.

Any positive assertion regarding dates or authorship, or assertion from which further inferences are drawn, should be based on some authentic document, itself rightly understood and definitely referred to. A date inscribed somewhere on the house itself must be accepted only with the greatest caution. It was very easy for a former owner of the so-called "Witch House" in Salem to paint the date 1635 on the gable; but it is far more important to learn from the manuscript contract, still preserved, that the house was still unfinished in 1675. A building contract is, indeed, the best possible evidence for a date, although it may often mislead as to the responsibility for the design, owing to the common use of the word "architect" in early American days when referring simply to the builder. Thus, in the account of the Salem Court-House which appeared in the *Massachusetts Magazine* for March, 1790, is the statement: "The plan of it was designed by the ingenious Mr. Samuel McIntire and executed by that able architect, Mr. Daniel Bancroft;" and William Bentley, writing of Bancroft in 1818, says: "He was the most able Architect we had. . . . As a practical man in every part of Carpentry in housebuilding I have never known Mr. B.'s superior." A dated and signed original drawing may well determine both date and architect of a house; but even such apparently unequivocal evidence as this requires some scrutiny. It is possible that the erection of the building was deferred some years after the drawing was made. If the drawing differs somewhat from the executed work it is possible that it was only a competitive design, and that the execution was entrusted to another designer. It is even possible that the drawing in hand is a measured drawing made from the building as a memorandum by some other architect, as in McIntire's details noted from Bulfinch's Barrell house. In this case, of course, the date of the drawing will be one after the building was finished, rather than before it was begun — as in the case of the architect's own studies. Such questions as these must at least be carefully considered, and statements qualified in accordance with the degree of certainty of the conclusions.

In the cases of the great majority of buildings where the exact date of erection is not revealed directly by contracts, drawings, vouchers, or correspondence, it is still possible to determine the time of erection within a few years by the records of change of ownership of the property, by tax records, or by insurance policies. Thus the idea that the present form of the house at Monticello dates from before the Revolution was refuted by plats attached to two declarations made to the Mutual Assurance Company of Virginia in 1796 and 1800, which show a complete remodeling between those years. The results of careful examination of court records best appear in the Huger Smiths' volume on the houses of Charleston. Research of this sort, however, requires an amount of time and patience rarely at the command of the architect, and sometimes a knowledge of legal forms scarcely possessed by any one but a skilled conveyancer.

In the absence of these documentary evidences or of personal search for documents, any statements as to date and authorship based on earlier writers or on oral tradition should include a definite reference to their source, and should be made only with close criticism of their authority. The principles of historical criticism which here apply are based merely on common sense and scientific scepticism. The student must challenge every statement of his authorities to consider whether it was written in fulness of knowledge or without consultation of evidence, and at such a distance from the events as to render exactitude improbable. He must reflect whether the author of the statement was influenced by self-delusion or prejudice, which often leads the owners of houses to imagine them older than they are. If grounds are given for the statement, he must consider whether they justify the conclusion which has been drawn. All these considerations should be known, as they are important in order to determine the degree of dependence to be placed on published assertions or verbal claims.

There remains still another method of determining the date and authorship of buildings — a legitimate one, but one which has been much practised in the past on very inadequate foundations. This is the method of attribution on internal evidence only — the character of the building itself determining the ascription to such and such a time and architect. The method presupposes, of course, a certain number of buildings of which the dates and authorship are already surely known by documents. The change in various properties through a chronological series of these buildings, or the community of character in the various works of a single architect, is used to assign dates or authors to other buildings having similar properties. The difficulty with the application of the process in Colonial architecture has been that the basic series of buildings with known dates and authors has been lacking — and so the entire house has been built upon sand! Thus in ascribing to McIntire some interior woodwork from a house in Haverhill, the authorities of the Metropolitan Museum have probably been misled by the absence of any clearly formulated statement of the special peculiarities of McIntire's work. Even today it is doubtful whether there has been sufficient research in determining the dates, authors, and original forms of individual buildings to provide the necessary basis for accurate attribution of other Colonial buildings by their style. Nevertheless, in the matter of dating, sufficient material is now available to permit assignments which may be correct within a quarter century; and if statements based on such assignments are made to refer to the quarter of a century, and are accompanied by their grounds of belief, there can be no objection to them. Three series of closely dated examples illustrating the development of several characteristic features accompanied the earlier instalments of this article. Of course, a single feature alone cannot furnish sufficient ground for assignment of a building to a given time. The chronological bearing of all features of the building must be considered, to allow for isolated novelties or survivals, and, still more, to guard against false conclusions resulting from later additions.

An exemplary instance of adequate study and presentation of a single important building has recently been given in *The Architectural Record* by Mr. Rawson Haddon, in the case of the famous Morris-Jumel house, in New York. Whereas a current book entirely devoted to the mansion had left in doubt the time of its building, and had made many inaccurate statements as to its architectural history and interior decorations, Mr. Haddon's article settles the dates beyond dispute by reference to documents, and clearly distinguishes, on grounds of style, both in its text and in its admirable measured drawings by Mr. Joseph Palle, between the original construction and the additions made at various later periods. If other students would but take equal pains to deal thoroughly and accurately with the individual buildings which they take in hand, they would not only secure for themselves a more sympathetic knowledge of Colonial design, but would also provide the profession with the means of a far broader and more fundamental understanding of the Colonial style.

The Function of the Designer in the "Business" of Architecture

Part I

By Howard Dwight Smith

This is the first of several articles by Mr. Howard Dwight Smith, now Professor of Architecture at Ohio State University, formerly Supervising Architect in Mr. John Russell Pope's office organization.

These articles will continue to describe the ideal office organization as laid out by Mr. Daniel Paul Higgins in his two series of articles published in the September, October, November, and December numbers of 1916, and in the January, February, and March issues of 1918. In Mr. Higgins's organization there were four principal departments: those of Business Management, Design, Superintendence, and Interior Decoration. This second series of articles will deal with the Department of Design. It will be followed by a third series, treating of problems of Superintendence.— Ed.

Introduction

THE business of architecture, as has been pointed out, to be successful in this commercial age, this age of organization and efficiency, must be organized and must be efficient. In the preceding articles of this series examples and instances have been given of organizations which showed, both deductively and inductively, that organization and success go hand in hand. That is to say, deductively, successful practices have been found to be the result of efficient organization; and inductively, starting with efficient organization, success follows.

We have been given organization charts of various firms and offices, and Mr. Higgins has devolved what, by his experience, he considers an ideal organization. The chart of this organization, readers of THE ARCHITECTURAL REVIEW will recall, appeared in the March, 1918, number. It is the intention of these following series of articles to discuss the various parts and functions of that ideal office organization in as simple and direct a manner as possible, hoping thereby not so much to convey new ideas to the profession, old or young, but to reiterate ideas that no doubt have always been prevalent. Perhaps these articles might be considered an application of the old principle of "line upon line and precept upon precept." The mere statement in terms and phrases of some of the notions herein expressed may serve to arrest and crystallize ideas and thoughts which may have been long left wandering in the professional cranium unassigned and uncorrelated.

When the profession does take time to sit down and absorb the text in the current magazines, and thus gets away from the "quick lunch" method of taking the nourishment provided in each successive number, as it appears, by glancing over the plates and then relegating them to the scrap-book or office files; when it does take this time to read, it is usually well and entertainingly repaid. We recall sitting down to do a conscientious "forced march" through a recent number of one of these magazines, and finding an article, by one of the assistants in a prominent office of the metropolis, dealing with the relations between architect and client. In this article so many of the common incidents, situations, and controversies which we had often experienced were so clearly outlined in a lucid and altogether entertaining manner that we enjoyed it immensely. Not that alone, but they were furthermore so analyzed that we were able to draw helpful conclusions from our own experiences, which would not otherwise have occurred to us. And in the same number I was highly delighted with an enthusiastic and choicely worded discussion by a western practitioner of the pleasure he had enjoyed in the study and design of a particular problem, illustrations of which were found in the same issue. It is quite likely that every architect who is fortunate enough to have found time to read that article found in it an expression of feeling which he had himself enjoyed, and a renewal of a determination in future to enjoy his own designing in a similar fashion.

In the former articles of this series there have been pointed out to us examples of failures in the profession due to lack of conception of business system and order — or at least to a lack of appreciation of it in practice. This present series will not set up a counter-attack on the profession by cataloguing failures due to the lack of conception of design, or lack of appreciation of it in practice. It is likely that the list of failures due to lack of appreciation of design would far exceed that due to lack of appreciation of business. We might even quote a Biblical passage which would apply both to business and to design, — "The poor ye have always with you."

A discussion of the function of the designer in the business of architecture takes us pretty close to the heart of the whole situation. Architecture as a fine art must not be considered only as the development of economical planning; not necessarily as the expression of construction; not merely a gathering together of forms founded on historic or contemporary precedent; but "as the fundamental art of inventing and constructing objects that please by their intrinsic form and color." It is on the shoulders of the designer that there falls the task of meeting the difficulties in the practice of architecture which result from the requirement that architectural objects must be habitable, practicable, and also pleasing to look at.

1. The Qualifications of the Architectural Designer
His natural ability, artistic temperament,— real, not imaginary,— and necessary training

The individual whose name might be written into the design department of our ideal organization chart as its head must possess certain exact and important qualifications. Like blue ribbon stock, he must be able to point to definite previous accomplishments, and not alone to possibilities. His possibilities must be able to be gauged from his past performances. The winner of a Paradise Prize, or of a *Spree de Pomme*, or the successful competitor for the selection of the architect for the grand entrance to the Elysian Fields would qualify to a certain extent. But he who could point to successful structures which are the product of his fancies would more easily and certainly qualify.

It will readily be agreed that a good proportion of a designer's ability should be natural. Fertility of imagination, freedom from prejudice by existing forms or ideas, may be developed in most men; but the greater fertility exists in those naturally so inclined. This fertility of imagination must be accompanied by facility of expression, either by word of mouth or by delineation — preferably by both. Conceivably a good designer may be a poor draughtsman; but if so he must be an adept at vocal expression and an exceptional critic. He may be a poor talker, in which case he must needs be a draughtsman of ease and exactness.

As for artistic temperament,— that quality in a designer's make-up which may tend to create a gulf between him and his fellows,— it can only be considered real and genuine when it needs no excusing or explaining. It is like the authenticity of an antique, or the genuine quality of an oriental rug: it speaks for itself. Artistic temperament which has to be nursed along and brought out for exhibition on occasions is exotic. Too often it is made to play the rôle of charity in covering a multitude of sins — sins of carelessness in delineation, sourness of disposition, and laxity of morals. Real artistic temperament is a refined appreciation for the lovely and the beautiful in all things, and is as subtle an attribute as the hospitably aristocratic air of the true southern gentleman.

There are many who believe that the maxim "Poets are born, not made" is equally true of designers. It would be interesting to establish by actual vote of designers themselves whether natural ability, or environment and development, were responsible for the success of designers' work. The difficulty of such a procedure would lie in the method of determining who should qualify for such suffrage! If designing could be classified as an exact science, then it might be said without qualification that designers can be made; but so far as rules or theories of design, com-

position, color, etc., can be laid down to facilitate material expression of conceptions of the imagination, training is of inestimable value.

Training and Experience

Experience, of course, is the best teacher. The question of scholastic training brings up the large and interesting problems involved in the study of the proper arrangement of school *curricula*. There can be no doubt but that, for broadness of vision, a graduate of any of the recognized schools of design has a decided advantage in the field. In this connection it is interesting to note that the work of the Committee on Education of the American Society of Beaux-Arts Architects has so increased the scope of its activities that it is approaching as nearly as possible, under the circumstances, to the work of the universities. Scholastic training is only successful in so far as it trains in study and in method of attack; in that it is general and not entirely specific.

But this article is not intended to be a discussion of school *curricula*. The Education Committee of the American Institute of Architects and the Association of the Collegiate Schools of Architecture are doing much to standardize school training with a view to getting the best results in practice. It should be said, however, that we are personally convinced that subjects should be dwelt upon which are not likely to come under the direct attention of a graduate upon his entering an office. The executive head of one of the large eastern schools has said that he considered it unusual if any of his students made themselves felt in the profession within five years of their graduation, but that he looked for his best men to stand head and shoulders above the average from that time on.

The Importance of Travel

The education afforded by travel is broadening in any profession; but to the designer in architecture it is almost absolutely essential. Design in architecture is so dependent upon the intelligent study of precedent that an intimate knowledge of historic monuments and examples is indispensable. Relative scale, *locale*, and color cannot be appreciated from the study of photographs alone. Foreign travel, to be truly beneficial, should be undertaken only after studied preparation, and should be entered into with the idea of hard work and zeal if one is to bring home with him anything to show for it except photographs, laces, and Roman pearls.

We have discussed the qualifications of the designer at some length, taking for granted that a good designer is essential to an ideally successful organization. We have tried to show that he should have natural ability; that he should be artistically sympathetic; that he should be a facile draughtsman; an artist, and somewhat of an art critic; that his education should be broad and general as well as specific; and finally, that his vision should be enlarged by foreign travel.

2. The Designer's Position in the Office Organization

Its necessary permanence, and responsibility for the distinctive character of the work of the office

A designer as a permanent unit in an organization we consider essential beyond argument. Whether or not this function is performed by the head of the firm, it should be definitely taken care of in the organization chart. In the hypothetical organization as indicated by Mr. Higgins in his articles, it is even presumed that the position be as personally permanent as possible. That is to say, it is considered more businesslike, and even good business economy, to keep the same designer in the organization continuously. This principle is opposed to the practice of the periodic calling in of a designer of established reputation for each particular problem or set of problems which comes up for the organization's consideration. It is not necessarily to be inferred from the foregoing statement that those offices which do not employ a designer continuously are thereby prompted by the possibility of economy. If it is for the purpose of insuring variety of design, we are inclined to think it will rather create too much variety, and not enough unity of character, in the aggregate over a period of time. Capable designers can maintain sufficient variety in their work to avoid monotony, and still continue a unity of character. This does not mean that a designer must be a master of all styles. The variety which the organization of an office such as that of Mr. Charles A. Platt, for instance, is able to obtain in its work is quite pleasing; and at the same time it may be said that the Italian villa and the Colonial styles constitute its entire *repertoire*. The variety found in the work of McKim, Mead & White and of York & Sawyer is sufficient to avoid monotony; but it may be said that they work only in the Italian Renaissance and in Classic styles; and while Mr. Swartwout's efforts are almost wholly confined to the Classic, and his style is easily distinguished, it surely is not monotonous. So, also, the almost uniformly Gothic character of the work of Cram & Ferguson and Day & Klauder is not monotonous. We could continue down the list — or up, if you please — and we could point out organizations of large practice whose buildings have as distinguishing features as those of Peruzzi, LeMercier, or Wren. It is also easy to enumerate organizations of large practice, whose buildings cannot be catalogued as having established any uniformity of general character.

Having tried to show that a capable and experienced designer is a permanent asset to an organization, and assuming that we have won the argument,— if any existed,— we can next proceed to the discussion of his place in the organization. We can discuss the facilities which must be accorded him, the responsibilities which he must assume, and the duties he must perform.

Insulation from Annoyance necessary to provide opportunity for Study

Primarily, the designer must be free from the consideration of vexing structural problems. In the last analysis the designer is responsible for the exercise of that function of architecture by which alone it can be ranked as a fine art,— that of making its creations beautiful and pleasing to look at. The ideal designer is capable of adequately solving structural problems, if time permitted and circumstances demanded. The potential knowledge of construction will be sufficient to keep a designer from creating conditions impossible or extremely difficult of solution. But the point to be made here is that continuity of thought and quietude of study are essential to the preservation of thoroughness in design, and of unity of style and expression. Problems of scale and proportion are too easily interfered with by the breaking in of loads, shears, waterproofing, and the slide rule. When a design problem is in the process of solution, there is no time for the designer's mind to strike for an eight-hour schedule. There can be no question as to an eight-hour day, a nine-hour day, or a ten-hour day for the brain. It must have a twenty-four hour day.

So, whether or not the designer can solve his structural problems, he should not be required to do so, and he should be accorded quiet for his study. Practically, it has been found advantageous to have the designer in a room where he can be comparatively alone, a room in which there may be two or three working more or less continuously, but who can give way when special study is required, or special renderings are in progress requiring plenty of free room. This is particularly true with regard to competitions, which phase of work will be more fully discussed later. This partial seclusion avoids promiscuous and uninvited inspection, comment, and criticism by the general office force. In a large office this is necessary for discipline; in a small office this expedient is not so important.

The Designer's position in near relation to both Architect and Superintendent

From the nature of things the designer must be near the head of the firm, or, let us say, the senior partner, if the latter is the business getter of the organization. This proximity need not be in the geographical sense exactly, but certainly mentally and on the organization chart. To all outward appearances the architect himself, or the firm, is responsible for all phases of their work. But in the organization the firm's responsibility ceases when authority is delegated to the proper subordinates. But inasmuch as the reputation of the firm is gauged more by design than by anything else, it is natural to expect that the work of the designer would be closest to the firm's attention. This is, of course, based upon the assumption that the firm or the head of the organization is sympathetic to design. But even supposing he were not,— as is unhappily true in some cases,— but were a shrewd enough business man to recognize the money value of the designer in the organization, this nearness should be preserved in order that problems as they are presented may be subjected to sufficient and proper analysis and solution before they go into the hands of those farther down on the organization chart.

A Brief Record of the Transactions of the Fifty-First Convention of the American Institute of Architects

THE sessions of the 51st Annual Convention of the American Institute of Architects, held in Philadelphia April 24, 25, and 26 last, developed into a war-time convention of unusual interest. The meetings had been preceded by a communication to chapters suggesting, through mutual agreement, this year to forego the larger formal sessions which usually perpetuate the machinery of the organization. It was the implied, if not the exact, understanding that such a "skeleton" convention as was proposed would meet merely to go through the form of balloting necessary to continue the officers for another year, or through the duration of the war; that no business of any importance would be taken up; and that its principal purpose would be to make such changes in the Constitution and By-Laws as were necessary to adapt the routine perpetuation of the Institute to war conditions, during such time as they might continue. With this understanding the chapters agreed to send only one quarter of their usual delegates,— each chapter having at least one representative,— and, with the exception of the Dayton, Texas, Louisville, and Washington, D.C., chapters, all were represented at this convention.

It became evident almost immediately, however, that the convention was in every degree representative, and capable of taking such action as any regular convention might have taken on any of the questions to come before it. It had all the atmosphere of the usual convention, somewhat intensified and made more businesslike by the smaller number present,— which actually only seemed to help to further business,— despite, or perhaps because of, the fact that the business was less cut and dried than usual.

The routine business accomplished is perhaps of less interest to those unable to be present than the definite actions taken on matters of policy or principle in the course of the sessions. It is perhaps most important of all to record the convention's decision as to continuing its officers. This policy actually came up for settlement early in the sessions, as certain modifications in the Constitution were necessary to reëlect one or two officers who had already served their full term; and the convention, after full and careful consideration of all the evidence placed before it, finally failed to make such necessary alterations.

To make this action clear, it should be said that while those present appreciated the original "gentlemen's agreement" under which the convention was held, it had, from the very first, been more or less nullified because, after receiving the approval of the chapters, various communications were sent to members announcing items of considerable importance to come before the convention — one or two concerning drastic changes in policy that would warrant the most representative consideration from all members.

Certain delegates had come fully instructed by their chapters on these questions; others felt they had sufficient authority to represent their local chapters; and, after full consideration, the proposal to depart from the Constitution and By-Laws failed of passage, solely because the arguments advanced failed to be convincing. Indeed, more often than not they proved that whatever position the Institute or its representatives held at Washington was as much because of the organization itself as because of the personnel of its representatives. Added to this, the president's opening address had taken rather the form of an apology for failure to obtain for the architect the official position the profession felt he should occupy in war work, and practically suggested that the way to obtain a government position was to ignore their relation to the profession of architecture, and to the Institute, and apply for service as an engineer instead of as an architect!

The other discussion of most general interest was on the related subjects of advertising and signing of buildings during construction. The statement in the Canon of Ethics that "it is unprofessional to advertise" was finally repealed; and this somewhat abbreviated step toward improving the *morale* of the profession was undoubtedly desirable — as it has rather long been obvious how badly the profession needs this sort of tonic. Still other restrictions now existing "on the books" that force individuals into direct defiance, or connivance,— with mental reservations,— when conducting their practice to square with normal business methods should be modified! It gives some hope that later conventions will further square precept with practice, and remove other restrictions now preventing membership in the Institute from more broadly representing the whole profession.

The signing of buildings during construction aroused enough discussion to show the need of placing the question more completely before a coming convention. Though failing clearly to visualize the situation, this convention passed a resolution that "placing the architect's name on buildings during construction, and the signature of building after construction, in a dignified manner, had the approval of the Institute."

The usual brain-storm that year after year invariably passes across the sessions this time made its appearance when the convention confirmed the loosely worded and ineffective statement formulated by the Directors to condemn book or pamphlet publication of architectural material supported by advertisements — which matter we will later discuss more fully than is possible in this condensed summary. Another change worthy of similar later discussion was that taken to prevent the architect "engaging directly or indirectly in the decorative trades."

Finally, there was the registration law — another subject on which the Institute is being forced toward a definite policy, despite its having avoided this responsibility for the last several years — and the ever-present discussions of educational problems, which seem to get very little forward each successive year! Fourteen States now having passed laws regulating the practice of architecture, it was proposed that a "standard law of registration"— not "licensing"!— might be devised, to maintain a uniform grade of professional competency.

Proposed changes in the Competition Code and the Schedule of Charges were referred to the 52d Convention. The Board was also authorized to publish a "Handbook of Professional Practice."

Although unanimous action at the opening of the sessions directed the dues be kept unchanged, it later developed there was little hope of increasing membership in the Institute until a means of lowering the dues, or increasing the service rendered the members, was devised. Under the loss of membership to be expected in war time, this seemed to vitally affect the organization, but is undoubtedly a problem to be solved by the Board of Directors.

The matters of most general interest otherwise discussed were in relation to housing — although little definite information was furnished — and architects' service during the war, especially the recompense for war service on special architectural problems. Both these matters are so important and complicated that we desire to reserve them also for later editorial consideration.

The convention adjourned without taking the action provided for in the original understanding with the chapters,— legalizing continuing the organization by similar "condensed conventions" during succeeding war years; so one more such "extra legal" session as was arranged this year will have to be held.

The principal addresses were by Mr. Medary, Mr. Sturgis, Mr. Elmer C. Jensen, Mr. E. J. Russell, and Mr. Ackerman; and at the informal supper at the Germantown Cricket Club, Friday night, by Mr. Albert Kahn, Colonel Starrett, and Mr. Thomas Adams. The Philadelphia chapter entertained the delegates most acceptably in different clubs and houses on Wednesday; they were shown the restorations in progress at the Independence Hall group and taken to see Mr. Widener's gallery on Friday; and were guests of the American International Shipbuilding Company at Hog Island on Saturday. Another unusual feature was the exhibition of the personal work of Mr. Wilson Eyre, in the gallery of the Art Club.

Government War Housing

What Has Been Accomplished Thus Far — Down to May the First

A Brief Statement of the Facts

WE have been on the verge of war since August, 1914 — and did not know it!

We entered the war in April, 1917.

We began to *talk* about Housing in September, 1917.

The first appropriation to be expended on Housing, of fifty millions of dollars, was finally made available for use by the Shipping Board on the last of February, 1918.

As far as can be definitely ascertained, just previous to May the first, even the architects had not been selected and the preliminary planning of the houses had not been begun on more than twelve or thirteen millions of this first appropriation!

Of the sixteen or more most important projects originally proposed for the housing of ship-yard workers, up to that time only the following had been definitely accepted or practically agreed upon: Hog Island, Pa.; Newport News, Va.; Camden, N. J.; Chester, Pa.; Bristol, Pa.; Sparrows Point, Md.; and Wilmington, Del. (The latter only within the preceding week or ten days!)

Plans for certain of these houses were ready for letting of contract, in the case of Newport News, as early as January last; in the case of Hog Island, in February. Beyond this point, however, progress seems to have been difficult or impossible.

What Caused the Delays

Well, in the first place, no one in authority on the Shipping Board seemed willing to accept the final responsibility for taking such action as would allow work of construction to be actually started; besides, constant alterations in the standards adopted for the house plans and arrangement — such purely theoretical and arbitrary determinations, for instance, as of standardizing such unimportant details as making treads, risers, and story heights exactly *so* much (the latter figure — by the way — being determined upon without any regard to the customary and available stud lengths!); whereas, by conforming these details of the plans to proper dimensions, and varying the stories a few unimportant inches in height one way or the other, a considerable economy was to be effected, besides saving considerable delays in shipment, cutting, and waste in the lumber employed. Yet the adoption of such "standards" — *after* complete sets of plans had been made — meant large amounts of entirely unnecessary expense in re-drafting, re-figuring, and re-estimating probably every house in each of the few entire groups that were then, at least, ready to *begin!*

Besides the difficulty of obtaining a final acceptance on these plans, other troubles developed, principally in connection with peculiar and unusual requirements introduced into the structural contracts by the Government Legal Department; such requirements being so unusual to the contractors that in many cases they refused to accept them on the basis of figures previously quoted and preliminary preparations already partially made.

More weeks passed in fruitless argument; the Government, for instance, wishing to assume the responsibility for supplying the material, and having the contractors cover merely the handling and labor of its installation. Obvious opportunities for delays would here occur, including payment for time lost while waiting for undelivered material; as well as many opportunities for loss in connection with the exact *manner* in which the material would finally be supplied, which required new adjustments of the contracts, and tended to increase the cost and delay the completion of any final contract arrangement.

The Progress Made To Date

The result has been that, on the first day of May, THE FURTHEST ADVANCED *of any of the Government war housing products* was that at Newport News, and *there* the progress made had extended only so far as to *begin* the cutting of the trees on the site, in order to clear it in preparation for starting building operations! In this particular case the land — being supplied by the ship-building corporation — *was* ready and immediately available, the Government only assuming to supply the money to construct the houses!

The Hog Island project had also been delayed so long that Admiral Bowles — in mere apparent despair of ever obtaining *any* living accommodations, at the rate at which matters were then progressing — seems finally to have entirely abandoned the original scheme, and started out to commandeer houses in South Philadelphia, without apparent regard to the fact that, *if* this process would succeed in solving the *Government* Housing problem, it only did so at the expense of complicating that problem all the more for the larger community of Philadelphia.

Protests soon began to arise, and it then appeared that this was only a temporary subterfuge, and that Admiral Bowles had devised another method of meeting this situation by arranging with certain speculative builders (with whom Philadelphia, particularly, festers and teems!) to develop sections of their own land, with typical Philadelphia houses — the Government guaranteeing, financing, or taking over the property on its completion! Any one at all familiar with the ordinary methods of speculative builders would see at once where the Government, under these conditions, would pay considerably more for the houses than they were worth in the first place; and, when obtained, find them of a sort that would rapidly depreciate and require constant repair in the future!

Contracts on the Camden Housing development were, on this same date, on the way to being settled; but progress had there also been arrested in much the same manner.

Revived Hope for the Future

The chief, and only, reason for optimism in regard to the future, that was also coming into existence at that same date, however, was to be found in the fact that at last, during the previous two weeks, the Shipping Board had *begun* to reorganize its whole department having to do with Housing — and was associating with the work men so well known as Mr. R. D. Kohn, Mr. F. L. Ackerman, Mr. E. J. Russell, Mr. Morris Knowles, Mr. Frank Goodwillie, and others, who, as individuals, *perfectly* understand the problem, and can confidently be expected — IF they are given the opportunity, and sufficient authority! — to produce the best results that can possibly be obtained under the legislation enacted.

It is, as yet, however, too soon to expect to see tangible results of this change, therefore final judgment must be still further deferred.

The Second Housing Appropriation

Up to the first day of May the second appropriation of fifty millions of dollars had not yet passed through Congress! The bill still remains in a thoroughly unsatisfactory state, giving its principal emphasis upon temporary housing and providing of transportation facilities, thus avoiding clearly facing the problem; while it also devolves, at almost the last moment, that the bill does *not* carry with it the appropriation! It also appears that the Department of Labor, which, through all the many weary months that it has been in process of being made a law *has* been building up an organization ready to further its Housing projects, as soon as authority was finally given, is now confronted with the fact that the legislation, when passed, will probably take this authority *out* of the hands of that department and place it directly within the jurisdiction of the President instead!

The Department of Labor has meanwhile also lately added to its organization such well-known architects as Mr. Burt L. Fenner, Mr. John Cross, Mr. Max Dunning, Mr. Lionel Moses; and at its head is so well known and practical a builder as Mr. Otto Eidlitz.

And meanwhile, there has accumulated in Washington a huge number of applications for assistance in meeting the Housing problem, from all sorts and kinds of business concerns employed on Government work, who are finding themselves delayed by the lack of available labor — applications to the extent, it is now reputed, of upwards of one thousand concerns!

A GROUP OF CHAIRS WITH A STORY

I. SIX ITALIAN MODELS

WHEN the Boston Public Library was being built, Mr. C. F. McKim, in the course of a trip abroad, made a special effort to discover a group of chairs which could be used as models for some of the new chairs he desired to have made for the building. He found in France, Spain, and Italy twenty-six chairs, which were shipped back for consideration by the Library trustees. Of this shipment, thirteen were side and arm chairs of the popular Italian type, illustrated by these six best examples selected from the collection. Though apparently chosen by the architect as being old chairs, when the collection later passed into the possession of A. H. Davenport & Co., and they were sent to the factory to be gone over preparatory to being put together again, it was discovered that a considerable proportion of the pieces — although made of old wood — were, even at that early time, of modern manufacture!

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Sworn to and subscribed before me this first day of April, 1918.
(Seal) (Signed) WM. H. BARTLETT, *Notary Public.*

THE preservation of Colonial architecture in America has been sadly interfered with by the business prosperity and consequent necessary growth of certain sections in our older cities. It has unfortunately happened in too many cases that present centers of industry and manufacturing occupy exactly those portions previously built up as the better residential section during Colonial times. The result has meant either the irretrievable destruction of these old houses, or, occasionally, the marooning of a noble old mansion in a district where there is now too little opportunity of its being seen or discovered; and when discovered it is generally only to find its beauty marred or its dignity spoiled by the encroachment of inappropriate manufacturing structures on its old gardens, or new mercantile buildings towering closely around it upon the street. Too often, also, this change in the neighborhood has meant the boarding up of windows and doors to prevent vandalism, or otherwise the old dwelling stands ruined and desolate, the glass of its windows shattered, even the muntins broken out — leaving its once hospitable interior at the mercy of weather, boys, and tramps, until sooner or later the building is condemned, and removed as an eyesore, blighting even this commercial district, or is destroyed by what is quite likely to be mistermed an "accidental" conflagration!

A notable instance of such forgetfulness and disregard is one of the old Carroll houses in Baltimore, which, although owned by the city, and supposed to have been "restored," stands forlornly alone in the manufacturing district, shuttered and desolate. Another illustration occurs in the same community,— although Philadelphia is more fortunate in the number of historic and beautiful residences remaining in the appropriate surroundings provided by public parks,— where still another of the many Carroll places has been preserved by its fortunate location in a park of such ample extent as to retain the old terraced approaches with their grass ramps complete; and the building — although the two wings have for some time been used as public convenience stations — is now being reclaimed and refurnished, so that it may become a minor museum of Colonial taste and art in furniture and furnishings.

In the same city a new parking improvement has destroyed several blocks of houses along St. Paul Street, many of which, while not of the earliest or best periods, yet contained a considerable *residuum* of former beauty and dignity, in occasional doorways, mantels, staircases, plaster centerpieces, or interior finish. Unheeding of our inability to equal or surpass it in work of today, much of this now disregarded beauty has been swept irrevocably away — although the mayor may be persuaded to save the doorway of the Teagle Wallis house for a local museum.

WHAT can then constructively be done to preserve to future generations the fast disappearing examples of inherently American art of a type that we, as a nation, can most ill afford to lose? The problem divides into two parts. There is first to be considered the salving of these old structures on their original sites. Where this can possibly be done by making the surroundings into a park, the best results may be obtained. Where only the house itself, on a narrow margin of land, can be saved, less artistic and educational value can be expected to result —unless the building was itself originally a portion of a block, when some part of the old character of the whole may be preserved.

But in our older cities it would seem possible to found "Colonial Museums," which would provide architectural backgrounds in which could appropriately be preserved the best of the older details and finish otherwise doomed to destruction. And such a domestic museum should be located in a park, or other planted land, to supply sufficient setting to retain for future generations the distinctive flavor of our earlier life and civilization, under which American independence first grew and flourished. What so effectually shows the sturdy character of the times as a visit to Mount Vernon, or the refinements of gentle life than Homewood?

There exists a tremendous area of the United States where huge masses of the population may now never have the experience of viewing and admiring, at first hand, even *one single example* of an early Colonial home! Would it not be possible to rebuild, in such distant localities, some of the many beautiful houses that are constantly being lost to their original *habitat* — especially where, as often happens, they are not fully appreciated; or when equally good or better local examples may have been already permanently preserved? This is still possible from the amount of Colonial architectural material that yet remains. It presents a great opportunity for localities to conserve and maintain the best early examples of our distinctively regional American architectural forms.

Think of the effect — in some western city park — of two or three Colonial houses,— the steep-pitched wooden farmhouse of New England, its later post-Colonial mansion, along with the Southern Philadelphia stone or Maryland brick manor, each characteristic of its locality and period. Beside such standards would either public or architect have any excuse to further perpetrate such debased or impure architectural forms as they now too often try to pass for currency of true Colonial mintage?

PRESIDENT MAURAN'S opening address at this year's convention contained one trenchant paragraph that appeared to pass unnoted and disregarded — but yet clearly displayed the complete futility of the means ordinarily employed by the profession to affect or alter acts of Congress in which they are interested or concerned. Although the remedy therein indicated has been pointed out several times before,— and more than once in these very columns,— it seems worth while once more striving to give it due importance by reprinting it apart from its spoken context. This paragraph stated that the way to change the outlook of Congress on problems affecting the architectural profession is not by means of the recognized architectural organization, the Institute, appearing before either House of Congress, or any committee of the same; but by *individual architects*, in their home or voting town, becoming acquainted with and properly informing their senators and representatives in regard to the standards and customs of their profession, and its relations to public art and architecture. Every member of Congress is just as peculiarly open to approach and conviction through this individual and legitimate method as he is obviously more fully entrenched and protected from attack when sitting as a member of the legislative body in Washington!

While this statement is true, yet something more than individual initiative is required before any such method can be successfully employed. Some body — such as the Institute itself — must provide the lacking organization and initiate the campaign. It would nevertheless be a comparatively simple matter for members to see and discuss with their local representive in Congress any particular legislation in question at an appropriate time! This is the only method that gives an opportunity of ascertaining individual objections and meeting them in personal discussion.

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TRANSFORMING a dead corner into a landmark; the story of Number 737 Sheridan Road, Chicago.

Architect H. H. Waterman was asked to create a design that would be remembered by all who journeyed along Sheridan Road.

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The Architectural Review

Volume VI (Old Series, Vol. XXIII) June, 1918 Number 6

Some Preliminary Sketches and "Office Studies"

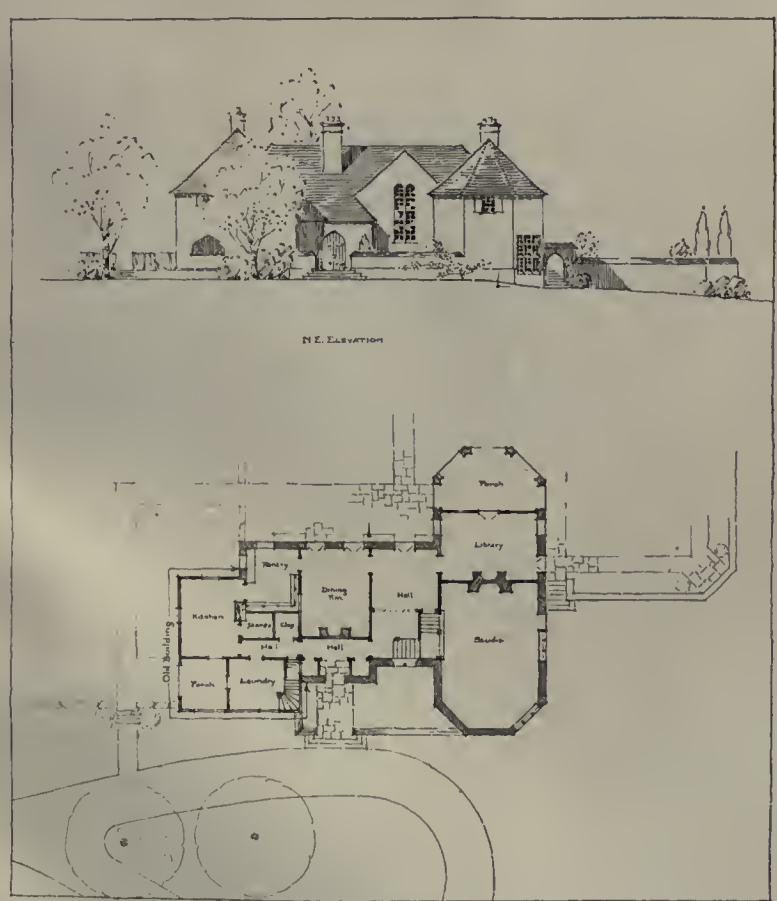
by Edmund B. Gilchrist, Architect

THE accompanying unusually interesting group of personal architectural studies was gathered from Mr. Gilchrist's office scrap-book record of his work. A few accompanying plate pages carry some other reproductions, also made from this collection, which have been selected to show those methods of treatment individual to Mr. Gilchrist's hand, and — to a certain extent — trace the development of this individuality in design.

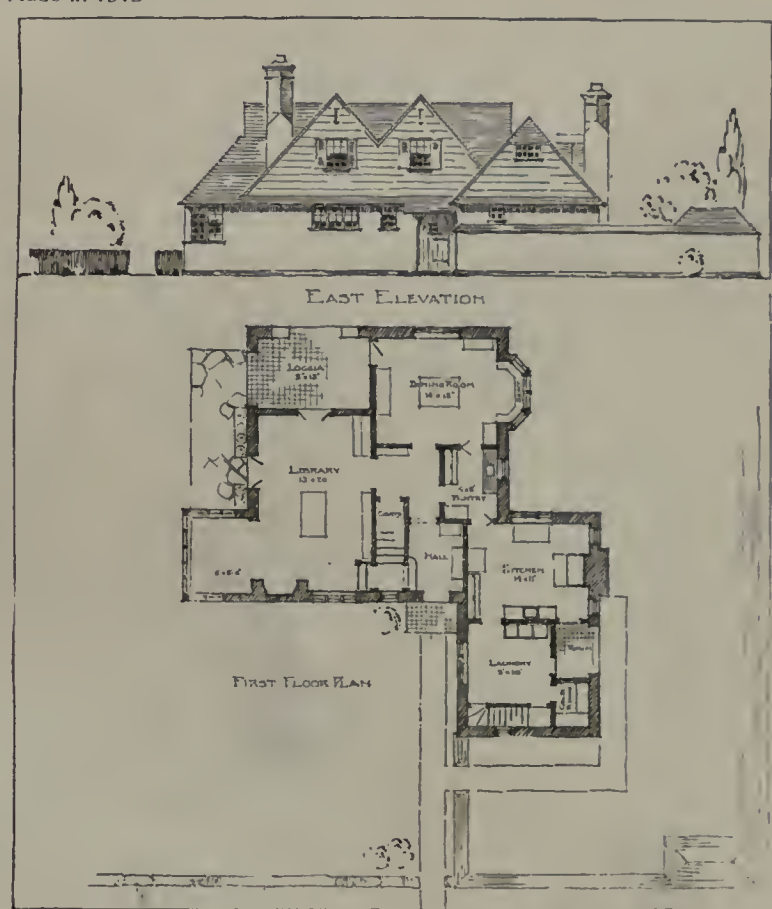
Whereas many of the earlier sketches are, for instance, drawn in the crisp, sensitive inked lines shown in the reproductions on this and the following page, that form of sketch design is not to be found at all in Mr. Gilchrist's later work; any more than the informal picturesqueness of the architectural compositions characteristic of this earlier style, which does not now appear in the later pages of this office record. Where originally he used clear color washes, occasionally, to help define and model a rough pencil study, by suggesting depth of reveal and characteristic color notes, — as in the early sketch here reproduced for Miss Smith's house and studio,— the drawing then always remained more in the nature of a personal thumb-nail note, hastily jotted down, while the idea was still fresh in mind; while in his later work he employs a definite crisp pencil line, developing his studies more elaborately, so that they now contain practically all the material essential to the final completeness of his working drawings. In this later period he also uses the color tint more painstakingly to model the building's composition and indicate its color treatment, while the whole design is given a final varnishing or "fixing" coat, which preserves the color and gives at the same time a golden *patina* to the tracing-paper on which the original study

Reproduced at the scale of thirty-two feet to the inch

Unfinished studies, in pencil and water-color tint, for a House and Studio in Allen's Lane for Miss Smith and Miss Cozens. Made in 1913



Pen and ink study, House for Mr. Samuel F. Houston, Philadelphia, Pa.
Made late in 1912



Pen and ink study for House on a lot of unusual restrictions
Made in 1910

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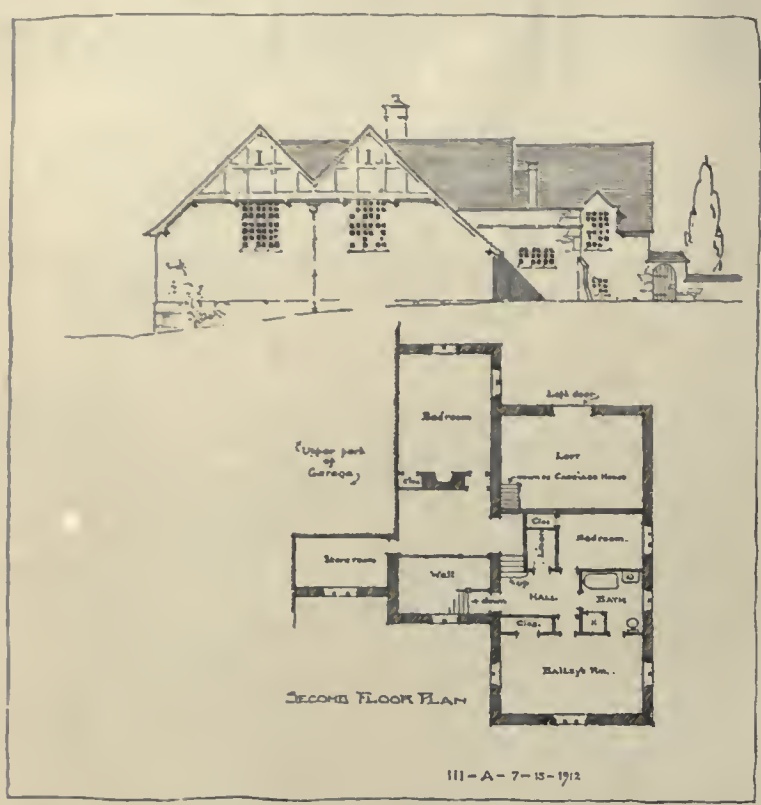
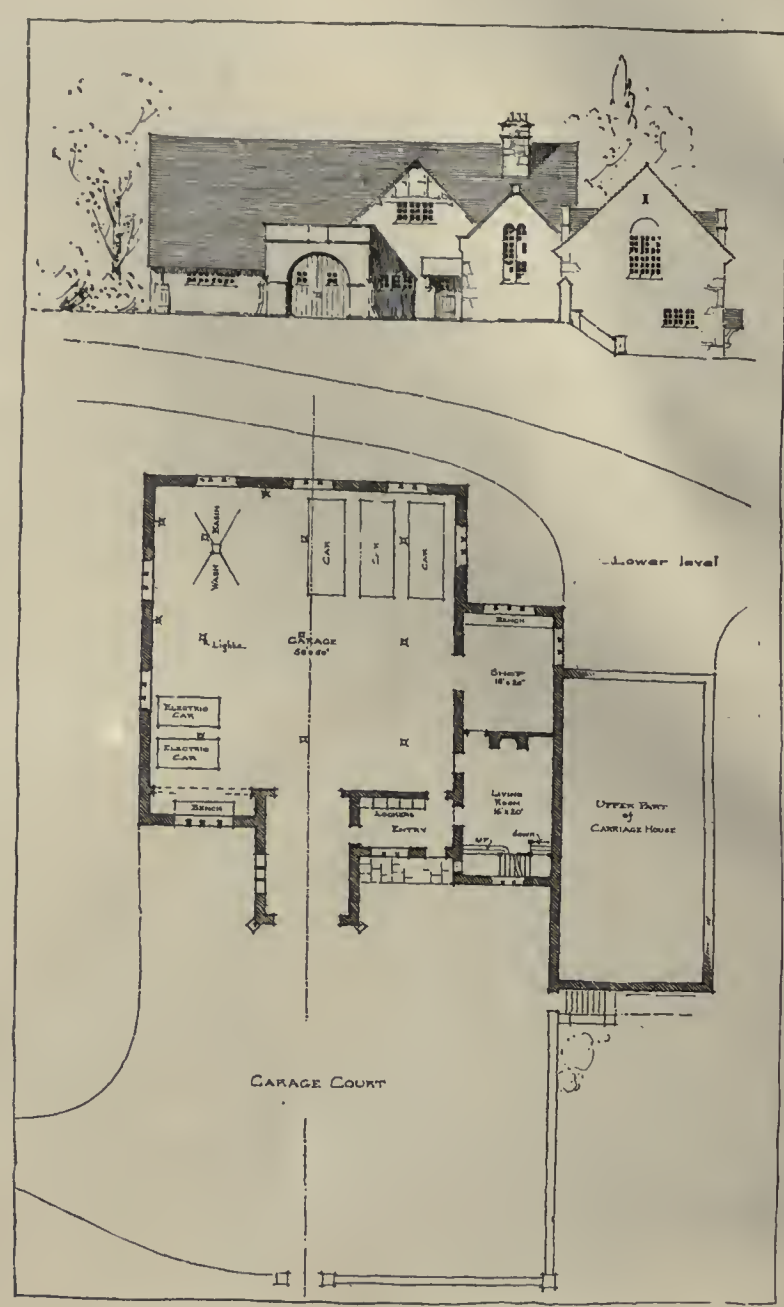


Reproduced at the scale of sixteen feet to the inch
Study for Garage for Dr. George Woodward, St. Martins, Pa. Made in 1912

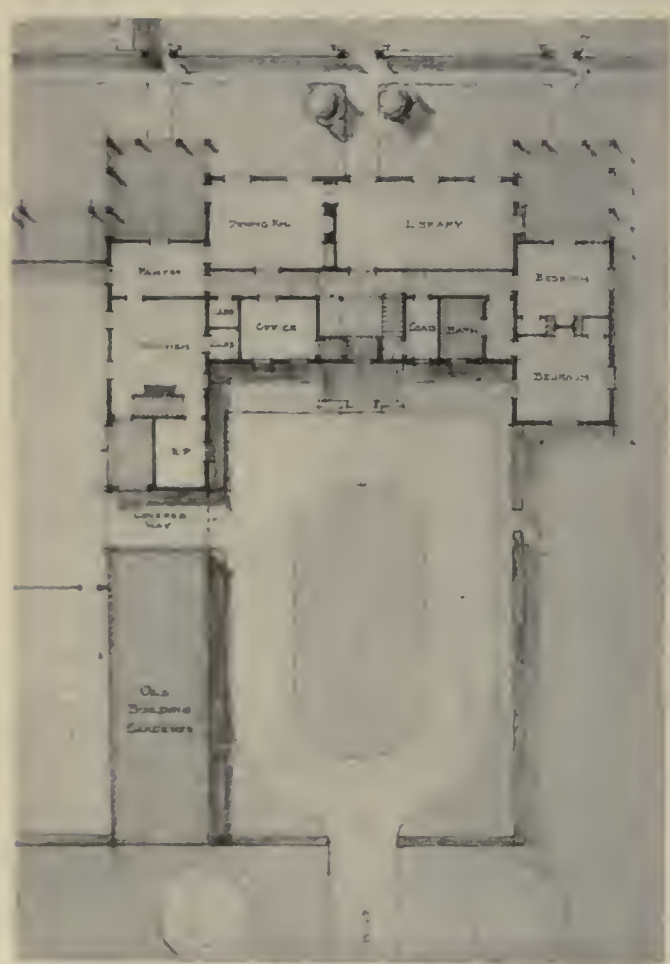
was made. The scale of these studies varies from one-eighth to one-sixteenth, the latter being more often utilized in later, and larger, work.

Beside these early pen and ink sketches, the water-color studies at the top of pages 83 and 85 belong to about the same period. The draughtsman will also find it instructive to compare those on page 83 with the upper drawing on Plate LXV, where the same building appears in the form of a more complete and later study.

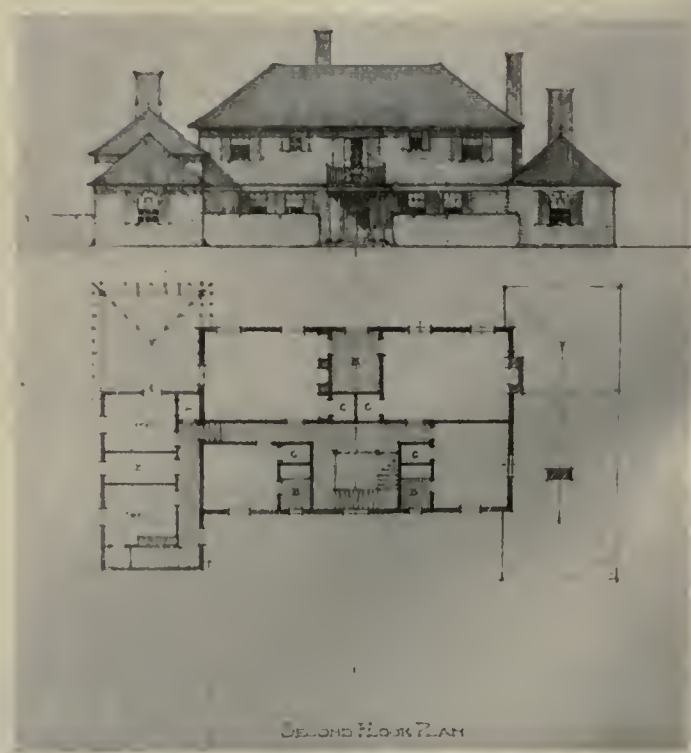
The three studies on page 85 — originally arranged on one sheet, in Mr. Gilchrist's characteristic way, but here re-arranged for space condensation — possess the very same informal and picturesque characteristics, also true of the two sketches on Plates LXVII and LXVIII, the latter being the study for Dr. Woodward's house, of which the detail photograph on page 87 shows a completed gable. The lower portions of the Plates LXV and



Reproduced at the scale of sixteen feet to the inch
Study for Garage for Dr. George Woodward, St. Martins, Pa. Made in 1912



Reproduced at the scale of thirty-two feet to the inch
Preliminary study in pencil, on onion paper, with crayon tint and fixatif, for Residence at Worton Manor, Md. Made in 1913

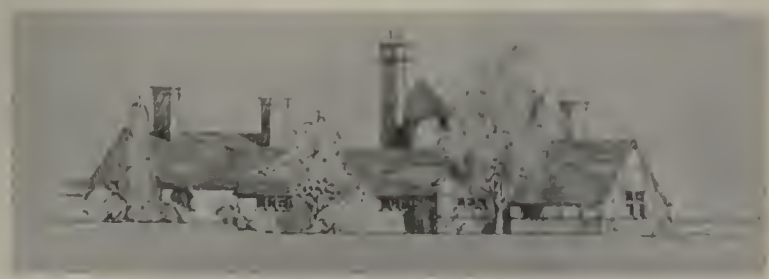


Reproduced at the scale of thirty-two feet to the inch
Preliminary study in pencil, on onion paper, with crayon tint and fixatif, for Residence at Worton Manor, Md. Made in 1913

LXVI are designed in another mood. Both are English in derivation, the first being influenced by the stone Cotswold district; and the second, in its general composition, by the later Georgian work in England, although the suggested detail is distinctly Italian in character. This latter quality appears still more consistently in the Harrington house at Germantown (page 86), while in this and the following plans is found the same fixity and sense of compression that recall the plans in the old "Builders' Hand Books," such as Gibbs and Chambers — perhaps explained by the continued use of the cube and double cube as the skeleton basis always back of plan arrangement and composition.

House designs of a late French Renaissance character appear on the lower part of Plate LXVII and pages 85 and 87, representing the latest — in point of execution — of the sketches selected for publication. As in the Lucas house, on page 86, their derivation from this style explains their unusual and peculiarly distinctive character. The plan of the latter house is also worthy of particular study.

During this same time Mr. Gilchrist's architectural manner has developed, quite as rapidly as the nature of his renderings, from the earlier informal plans, characteristically English in their general conception and exterior treatment, to the firm, graceful, and freely balanced classic forms of his later drawings. So one can see how the trend of this gradual development of his design has carried him on, as definitely, through the refined and chastely contained elements of Italian motives to the equally simple and exacting characteristics of the work of the later French Renaissance.



Rear Elevation (on Upper Level)

Front on Street

Studies in pen and ink and water-color tint, for a Lodge at Krisheim, St. Martins, Pa., for Dr. George Woodward. Made in February, 1914

These preliminary studies always evidence Mr. Gilchrist's personal feeling for completeness in delineation, by including not only the plan of the building itself, but quite often the design and even the most definite contours for determining the entire landscape development around the house, with the evident wise intention of firmly correlating all the elements of the problem by placing them before him at this small and comprehensive scale, clearly and definitely, at the very time of their original inception.

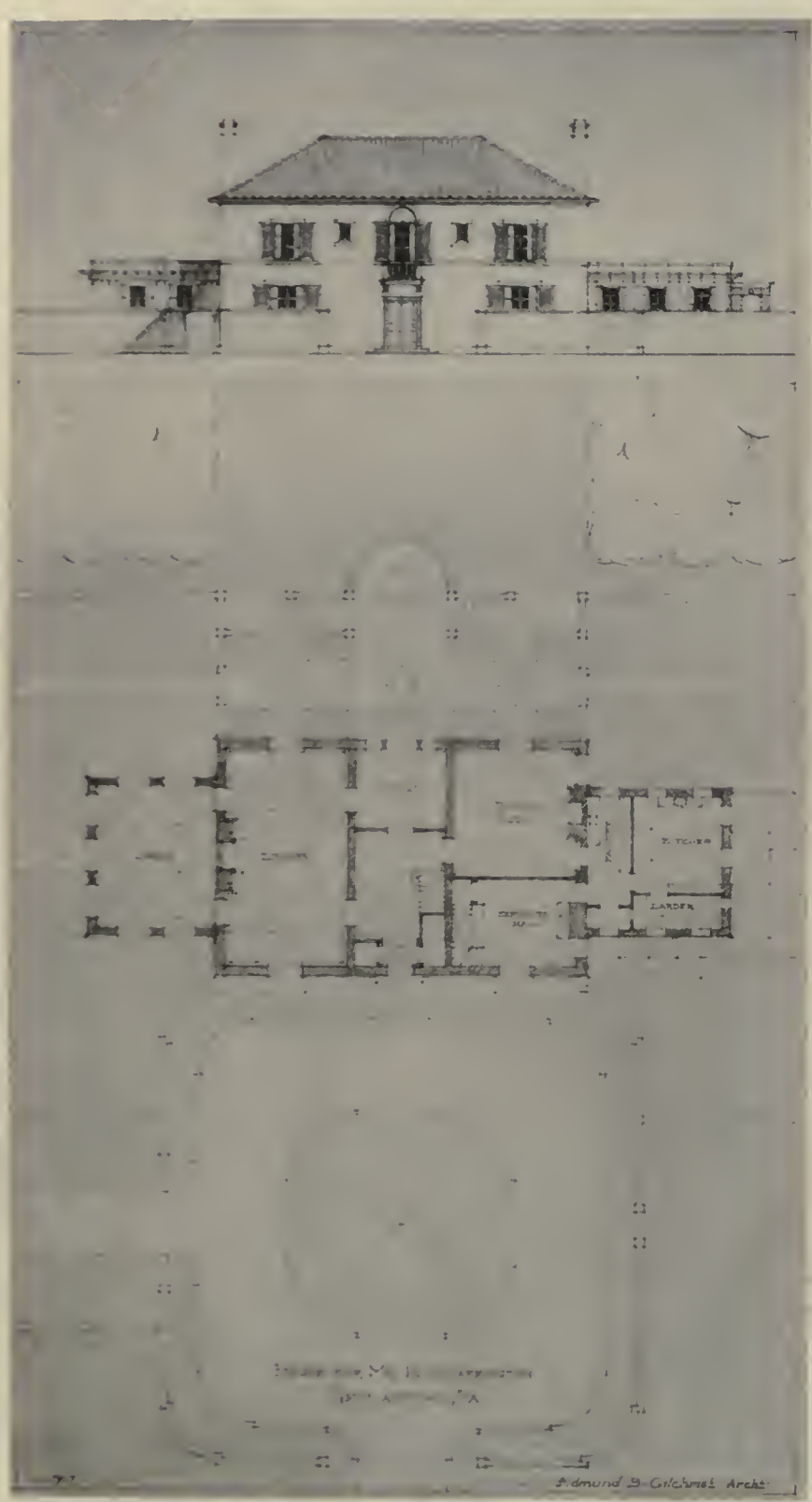
Probably it is to this exact method of visualizing the entire problem at one and the same time that Mr. Gilchrist's work owes its sense of completeness. The arrangement of plan seems always to await the determination of the various elements of use, outlook, and orientation; and then proceeds simply to its logically direct conclusion. While combining all the requisites of precision and dignity of architectural design, these designs also always possess a definiteness of quality that we are otherwise so often

Study for a Three-Family House, one of a group on the Estate of Arthur W. Perkins, Hartford, Conn. Made late in 1916

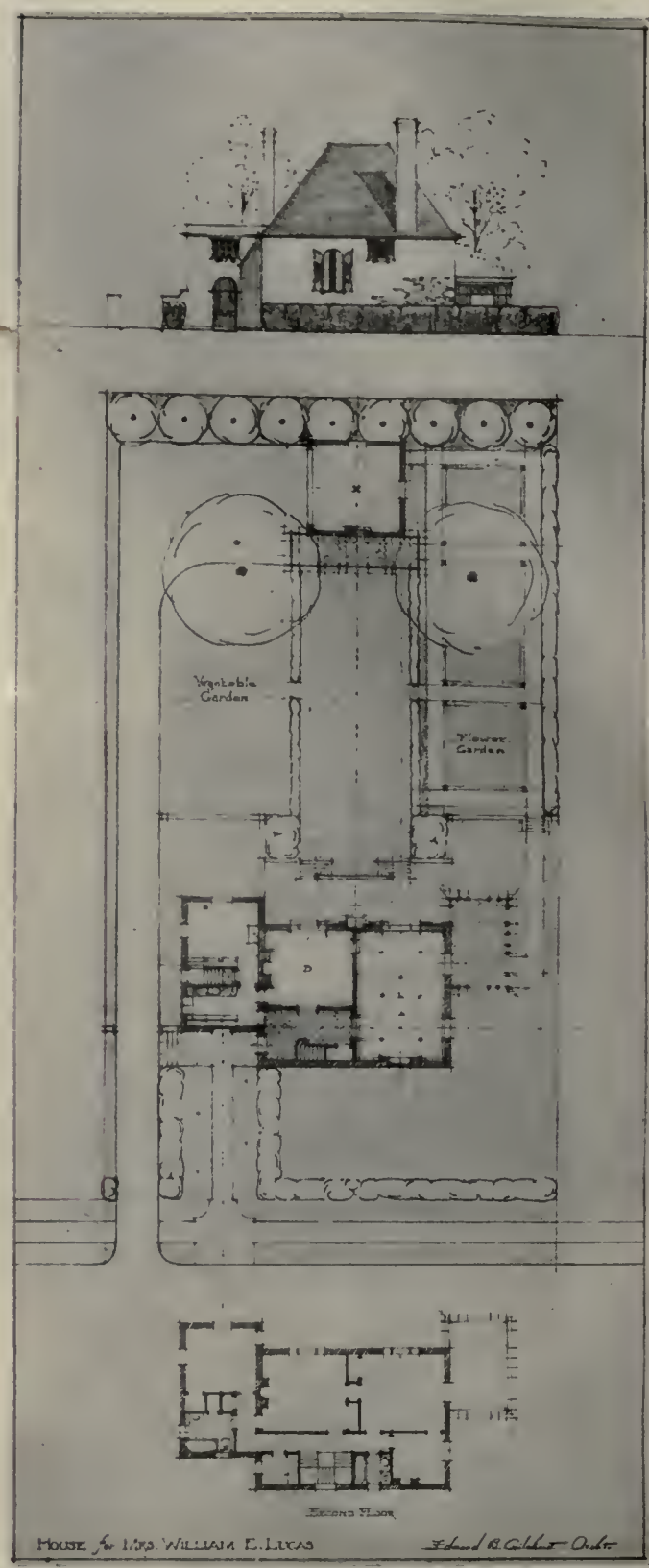
inclined to associate with the "engineering" rather than the "architectural" type of mind.

At any rate one certainly cannot escape the conviction that such well-considered studies must make a quite definite appeal to the client, that should thoroughly convince him of his designer's complete conception of the problem, and the fundamental reasons for the solution at which he has arrived; and at the same time, this simple and truthful quality of rendering studies would be likely to influence the client to accept them as a considerable promise of the final appearance of his completed building. In that event these studies should most certainly be of unusual value to those draughtsmen and architects who are, in their own practice, concerned with exactly similar problems, and are therefore most interested in seeing how others have confronted and found solutions for them.

For the assistance of those same draughtsmen and designers, it may be said that the methods Mr. Gilchrist employs as the basis of his particular technic are very simple. His sketches are mostly drawn in pencil on a



Study in pencil and crayon tint for House for Mr. M. H. Harrington, Germantown, Pa. 1917



Study in pencil and crayon tint for House for Mrs. Wm. E. Lucas, on thin paper, varnished. 1917

Reproduced at size of original, made at one-sixteenth inch scale

Rough block study, House shown, in later form, at bottom of page 87

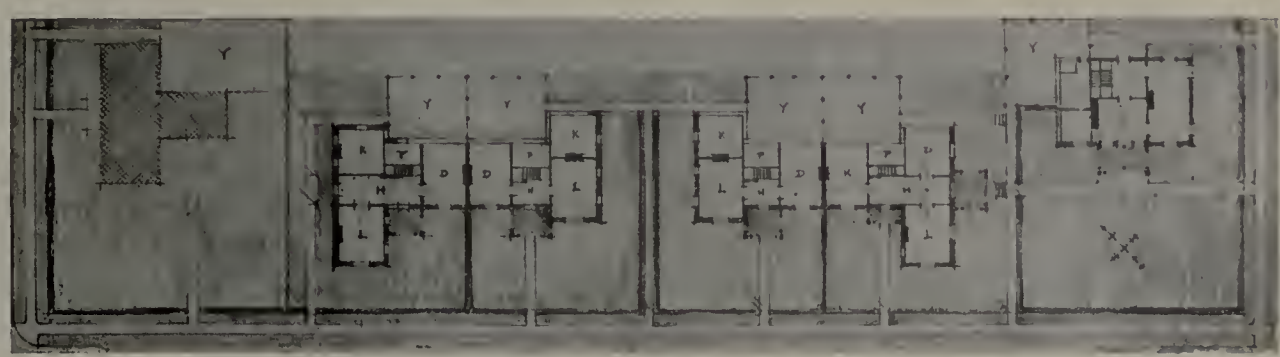
thin tracing (often an onion) paper. To secure the very unusual quality of their rather fine etched line, a very soft 2B pencil is used, and the point is kept always sharp, and applied precisely, yet lightly, in order to get the very black line that possesses the particular quality for which Mr. Gilchrist strives. Mr. Gilchrist has confessedly developed this method from a group of exquisite pencil-sketch studies made prior to undertaking his final etched inscriptions, by the famous French etcher, Charles Meryon, whose gargoyles of Notre Dame are so well known; and while Mr. Gilchrist considers he has only barely touched the remoter possibilities of the method, a close study of his original drawings shows he has at any rate succeeded far enough to prove the perfect sympathy and adaptability of this technic to architectural needs and purposes.

In working up these studies — the preliminary ones especially — it will be found that the paper is likely to become slightly tinted by the pencil grit; however, this grime can be kept fairly even in tone, and it then permits of cleaning down the high-lights in the composition to the lighter tone of the paper surface, when a final coating of shellac fixatif seems to accentuate the contrast between these high-lights and the darker tones. To obtain the best results, however, it is not possible to "fuss" over the drawing. It must be done quickly and correctly. If one line can be made to tell the story, it is always far better to employ one than to endeavor to use two.

For colors Mr. Gilchrist restricts himself to a few pencil crayons, which must also be applied evenly and lightly; and in order to obtain the necessary and proper value, one has sometimes to be applied over another, and the two mixed with the finger on the paper. His chief purpose in the use of color in this fashion is to study the actual color-scheme he has in mind for the completed building.

The sketches at the bottom of pages 86 and 87, and the drawings on Plates LXVIII and LXIX, are reproduced at the exact size of the original drawings (made in both cases at $\frac{1}{16}$ inch scale), and, excepting their loss of color and the exactness of line inevitable from reproduction, they provide the best possible opportunity to study the draughtsmanship and technic of this designer.

Detail of South Terrace, House for Dr. George Woodward, St. Martins, Pa.



Reproduced at one-half original size of drawing, or to one-thirty-second inch scale

Plans for complete group of Houses for Dr. Woodward

Reproduced at exact size of original drawing, or sixteen feet to the inch

Pencil and tint sketch for one Double House of group for Dr. George Woodward, St. Martins, Pa. Made early in 1916

The Function of the Designer in the "Business" of Architecture

Part II

By Howard Dwight Smith

3. Coöperation with the Supervising Architect

Methods of Studying the Problems: (a) to determine the client's exact requisites, and (b) the best possible practical and artistic solutions

THE chart diagram in the March issue shows the interdependence of the designer and the supervising architect, and their joint responsibility for the conception and execution of the work of the organization. The term supervising architect has been chosen by Mr. Higgins in his discussion as being most appropriately applied to that unit of the organization to whom are delegated executive powers as general in their nature as the duties and powers of the head of the firm himself. The work of this unit of the organization is to be discussed in subsequent articles of this series. It is sufficient to make this casual reference now, however, to show that the work of the designer is as much related to the supervising architect's activities as it is with the head of the firm. This is obvious when it is realized that the purpose of the supervising architect in the organization, after all, is to spread the influence and authority of the architect himself over more ground by the principle of representation, each supervising architect being regarded as a sort of deputy to the firm.

So far as the study of the problems is concerned, and the actual execution of the work, the designer and the supervising architect must work hand in hand. After the general problem of a new commission has been prepared by the architect, whom we shall assume forms the first point of contact with the client, the study of the problem in detail must be carried on by the two, as previously mentioned. It must be recognized that a very definite and correct statement of the requirements of the problem involved goes a long way on the road toward a proper solution of that problem. It is advisable, then, that the supervising architect, and also, in the preliminary stages at least, the designer, come in direct contact with the client in the discussion of the actual requirements to be met. This practice presumes, of course, absolute confidence on the part of the architect in the men of his organization, as well as absolute loyalty on the part of the men themselves to the head of the firm. The deliberate sidetracking of the organization from contact with the client, except in special cases, for reasons of tact or of business diplomacy, cannot be productive of the best results in the complete analysis of the elements of the problem by those who are to be held responsible for its solution.

Necessary Contact with the Client

If it is essential that the designer and the supervising architect establish these points of general and specific requirements by direct contact, it is equally essential that separate study of the same be made by organization conference apart from the client. This not only gives perspective and lessens the possibility of polite acquiescence to passing whims, or even serious ideas of the client, while in his presence; but it allows of discussion and "intramural" criticism, the indulgence of which in the presence of the client would be fatal. That is to say, for instance, if Mrs. Chinese Chippendale expresses a desire for an Italian hall in her new city residence, an animated discussion in the *sanctum sanctorum* of the designer as to the relative merits of a wood and a plaster ceiling would likely result in the choice of the proper motive and material. But a similarly frank discussion, in Mrs. Chippendale's presence, would just as likely result in her taking the commission out of an office where the responsible men of the organization seemed so undecided and ignorant, in their own minds, of the sort of thing she ought to have!

It may be well here to clear up what might appear to be a contradictory, or at least a complicated, situation. It is recognized that, for the purpose of discussion in conference with clients, the one-man point of contact is most satisfactory. This is true in our general scheme of organization, and this function is best performed by the particular supervising architect in charge of the work — the architect himself even deferring to his subordinate in the matter of discussion of detail. But the contact between designer and client is necessary to establish an acquaintanceship and a sympathetic point of view, which is hardly humanly possible of being obtained through any third party.*

4. The Preparation of Preliminary Sketches

To study the problem, interest the client, and justify the chosen solution

After having established the program, as it were, for each problem, the work of the designer then digresses somewhat from direct association with the supervising architect, and he is engaged in the preparation of sketches. In a cold-blooded industrial or commercial proposition, perhaps it would be well to work out an organization chart with as little contact between units as possible. In such an organization the designer — having conformed with the requirement of consulting with the supervising architect in the formulation of the program of the problem — could then crawl into his little cubby-hole and prepare his sketches, plans, and perspectives, and when they are completed send them to the other proper authorities in the organization by messenger and go on with the next problem. The successful practice of architecture, however, teaches that such a method as this would not be productive of the best results, but that full freedom of discussion is necessary to bring out ideas of design and methods of attack which would not be brought out or developed otherwise. It is perhaps the psychology of "thinking aloud" which is brought into play in such a case. This thinking aloud need not even be practised on the personnel of the organization. Discussions with the office-boy, the janitor, or the postman may be quite as productive of good results. In fact, the less appreciative the victim, the greater might be the tendency to crystallization of the designer's own thoughts and ideas by means of such a general conversation.

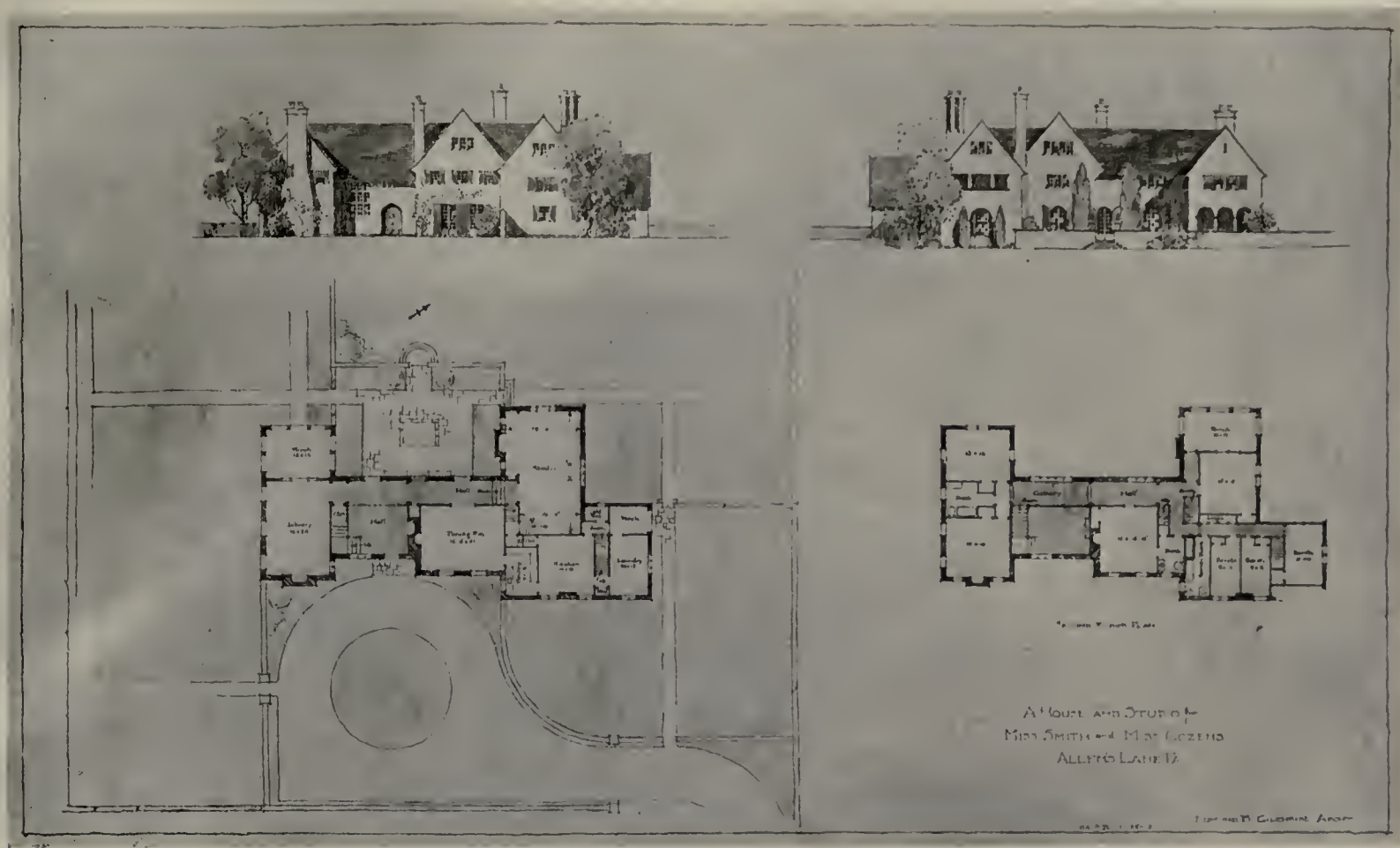
Other Uses for Sketch Studies

The prime purpose of the preparation of sketches — next after their actual value in defining ideas for exact study and final appraisal by the designer — is virtually to show proposed or possible solutions of the problems as a basis of discussion and presentation to clients. The preparation of sketches fulfils another very distinct and useful purpose. A client, or a prospective client, of an architect feels, or wants to feel, that his architect is not only his professional adviser, but also his artistic mentor. Nothing so excites admiration for one's artistic ability as an attractive sketch and an interesting and "snappy" presentation of the plans. Nothing so inspires confidence as a carefully studied and executed rendering of projected work.† The acceptance and approval of projected work on the basis of a set of such drawings makes one's client one's champion before the whole world.

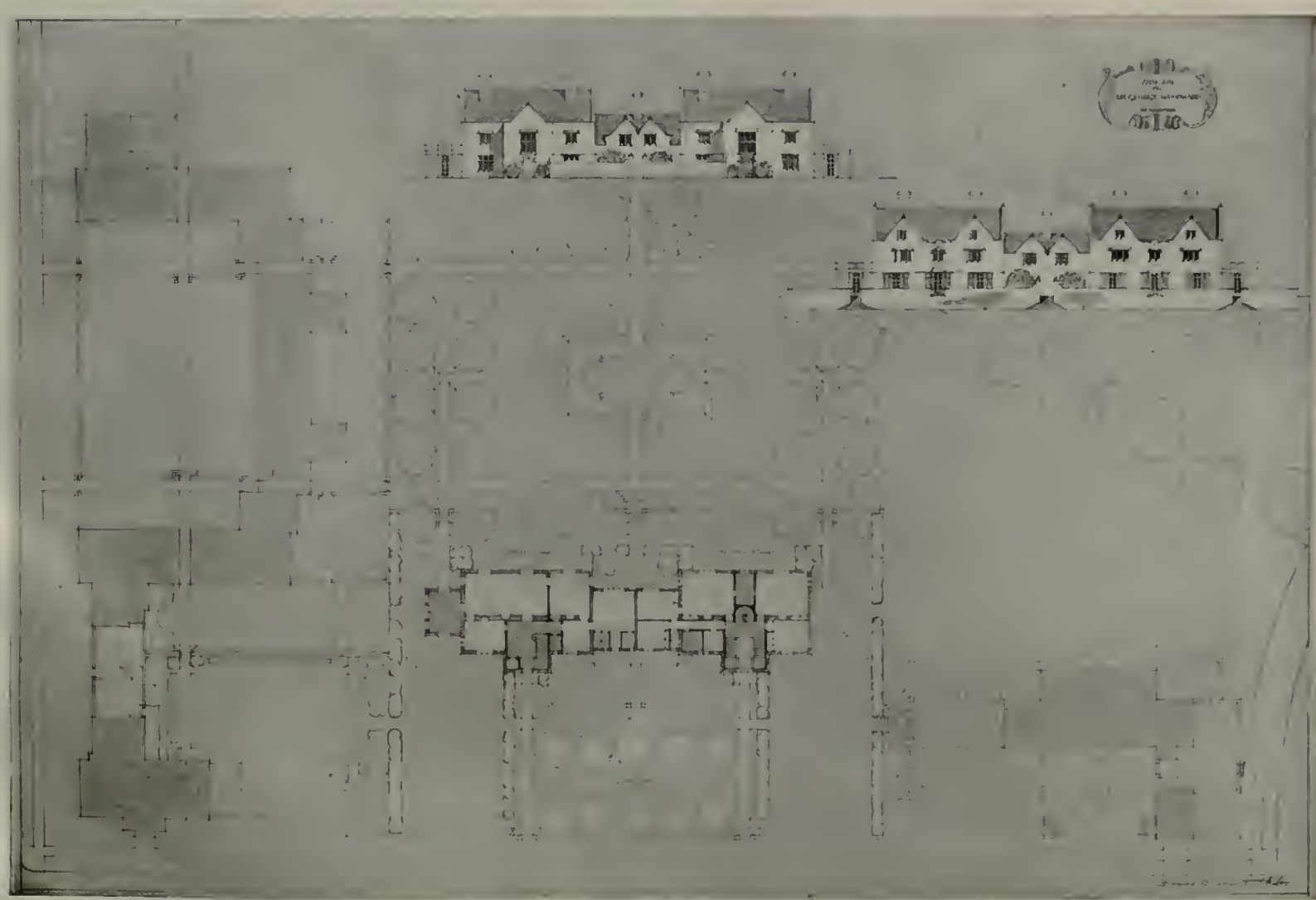
It is not for the satisfying of the architect's vanity that this admiration and confidence are necessary. It is for the purpose of being able to lead the client's thought and to direct his activities by suggestion along such lines as will be artistically successful. The more nearly the client accepts such suggestions as law and gospel, the more satisfactory will be the artistic results; and the greater the admiration of the client for his architect's artistic ability, the more readily will he accept these suggestions as his sole guide.

* The author here touches upon a problem in architectural psychology, a separate, yet vital, matter to the profession. It covers the client's inability to understand or clearly state his own problem, and indicates that much of the success of the architect depends upon his ability to deduce that problem from "between the lines" of his client's reasoning.—Ed.

† *Vid.* the studies by Mr. Gilchrist on immediately preceding pages.—Ed.

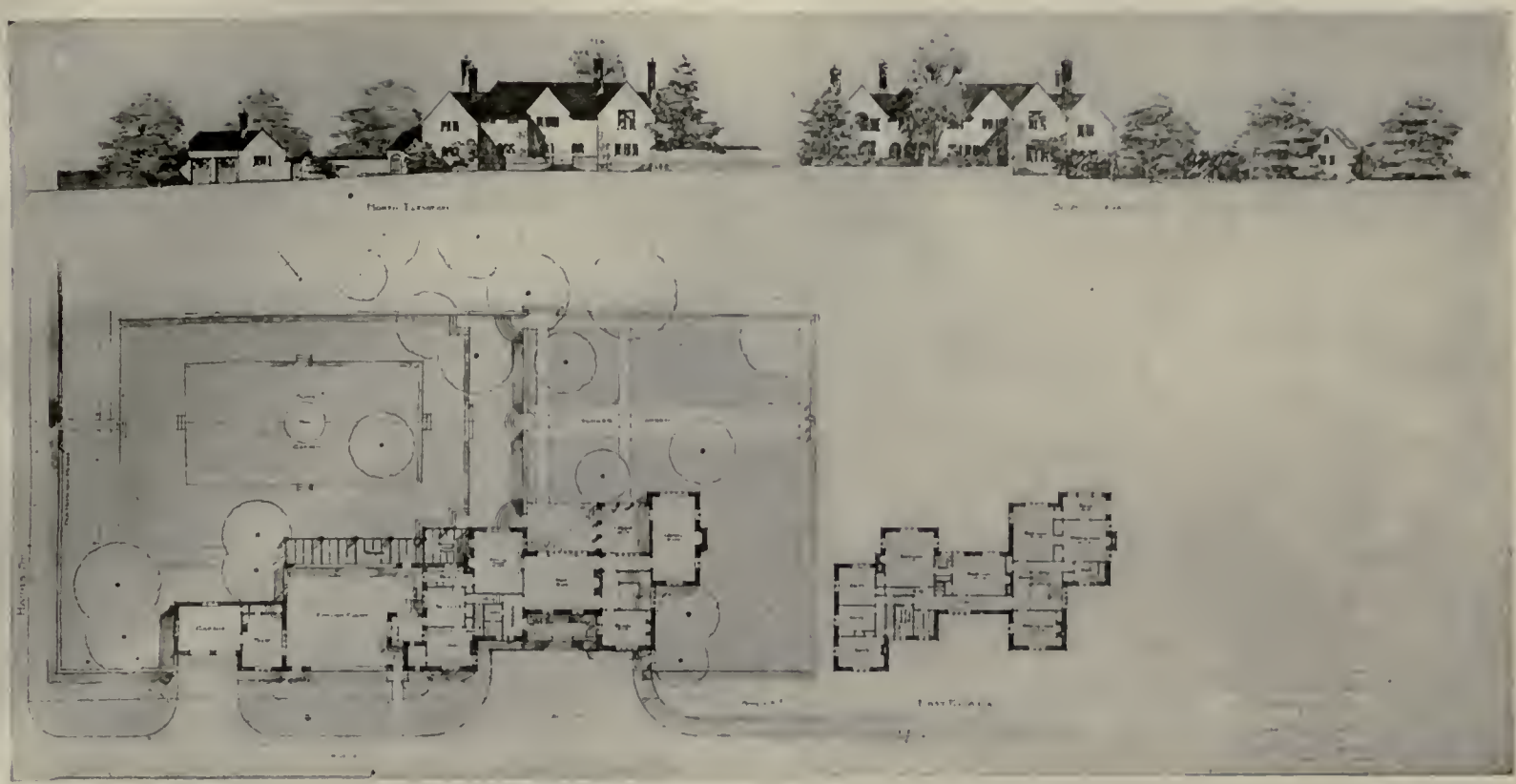


PRELIMINARY STUDY FOR HOUSE AND STUDIO FOR MISS SMITH AND MISS COZENS, ALLEN'S LANE, PA.

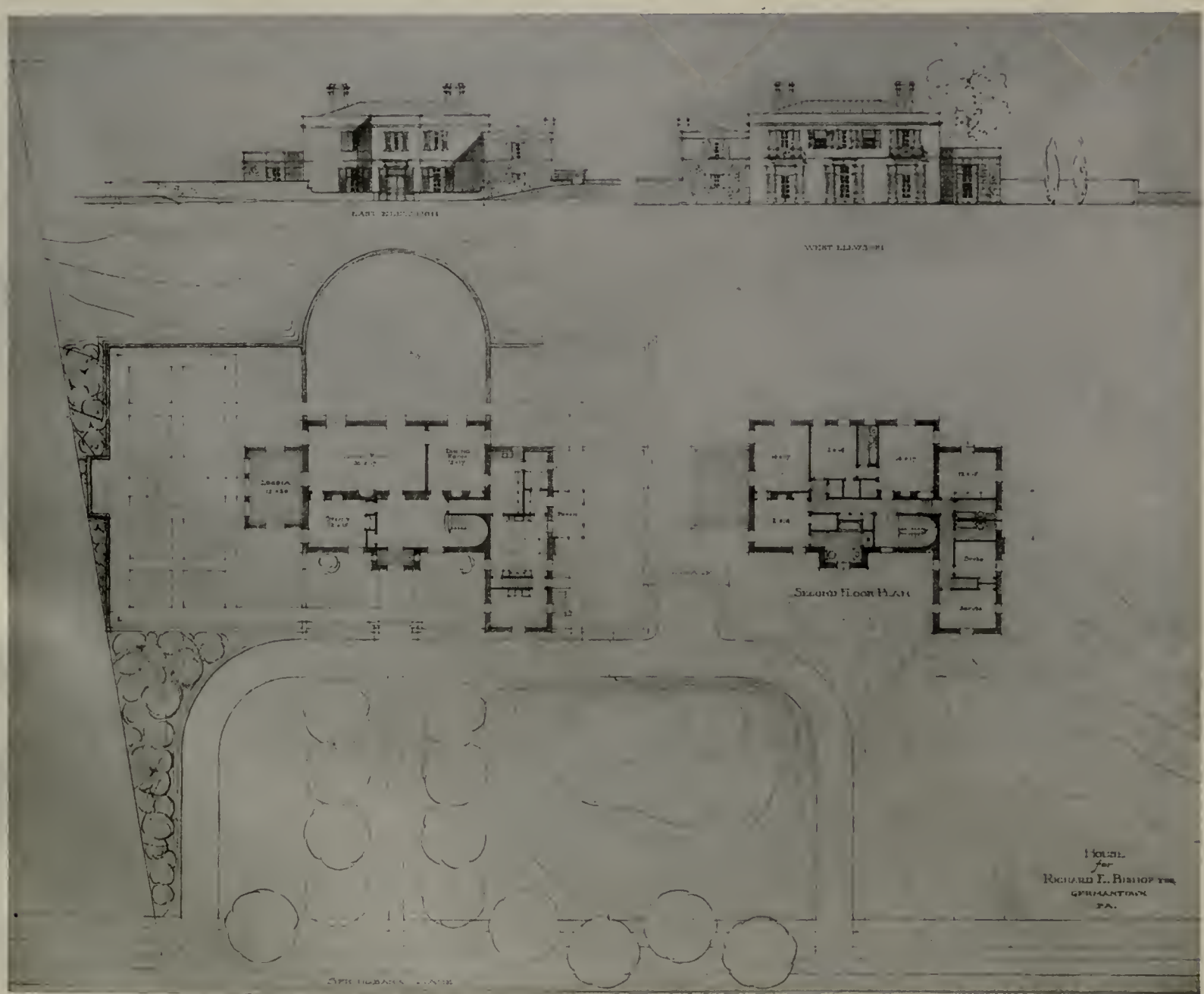


STUDY FOR DEVELOPMENT OF PAIR OF HOUSES FOR DR. GEORGE WOODWARD, ST. MARTINS, PA.

EDMUND B. GILCHRIST, ARCHITECT

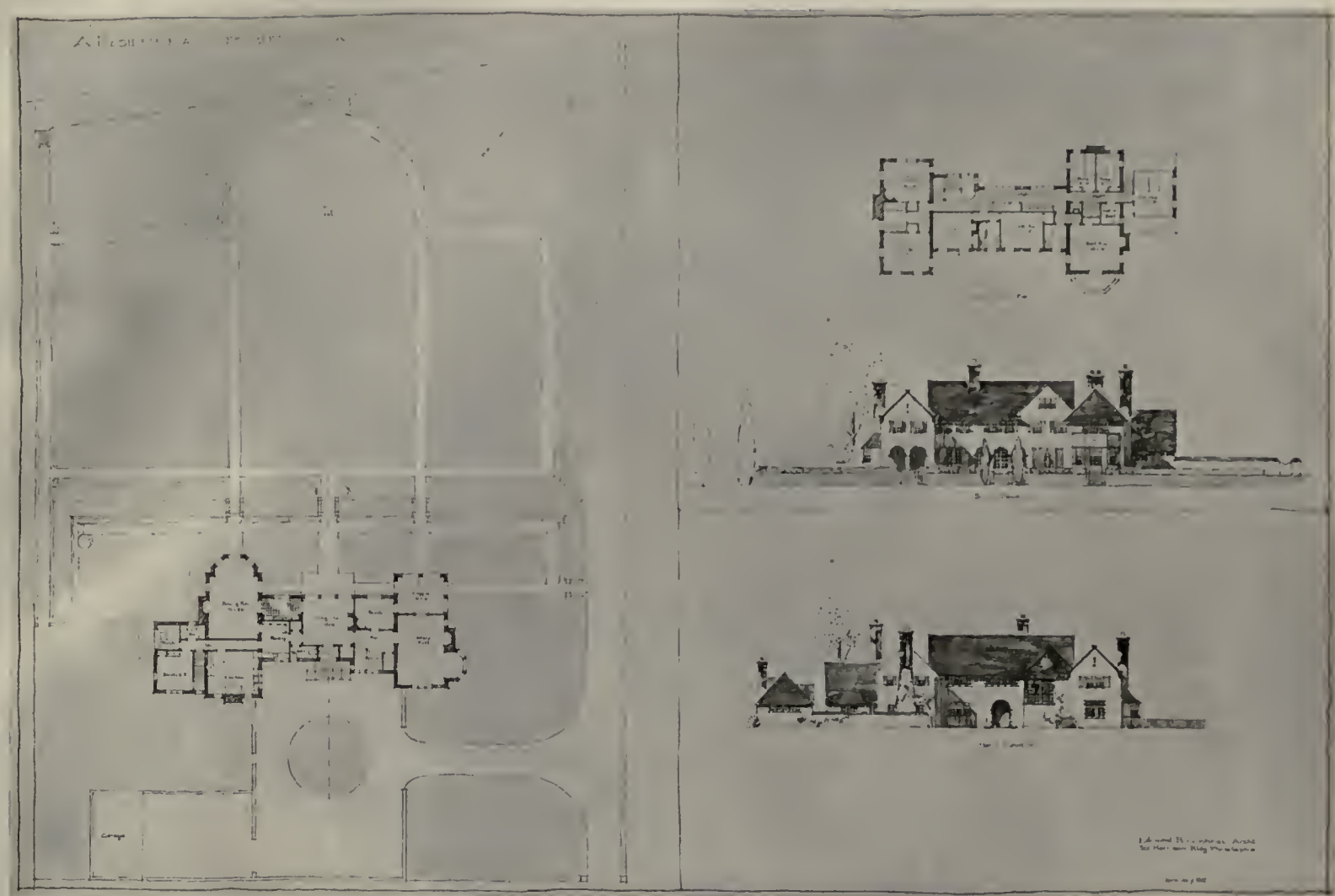


PRELIMINARY STUDY FOR "AWBURY," THE RESIDENCE OF WILLIAM M. C. KIMBER, ESQ., GERMANTOWN, PA.



SKETCH FOR HOUSE FOR RICHARD E. BISHOP, ESQ., GERMANTOWN, PA.

EDMUND B. GILCHRIST, ARCHITECT

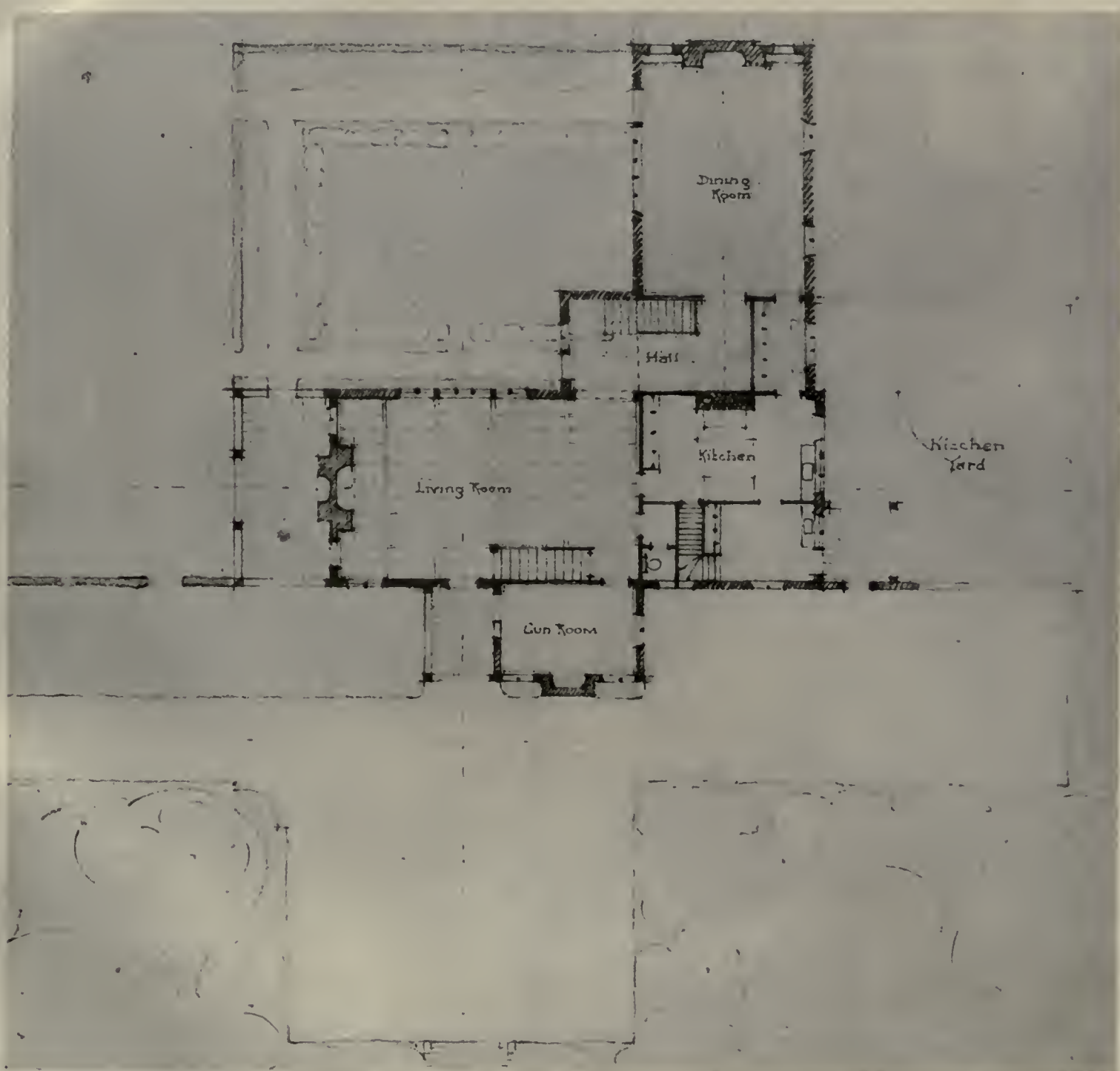


PRELIMINARY STUDY FOR HOUSE FOR DR. GEORGE WOODWARD, CHESTNUT HILL, PA. MADE IN 1912.

STUDY FOR HOUSE FOR WARREN M. FOOTE, ESQ., SWARTHMORE, PA.

EDMUND B. GILCHRIST, ARCHITECT

EAST ELEVATION



Reproduced at same size as original sketch, the scale of sixteen feet to the inch.

HOUSE FOR CHRISTOPHER L. WARD, ESQ., NEAR WILMINGTON, DEL.

EDMUND B. GILCHRIST, ARCHITECT

Reproduced at same size as the original sketch, the scale of sixteen feet to the inch.

HOUSE FOR CHRISTOPHER L. WARD, ESQ., NEAR WILMINGTON, DEL.

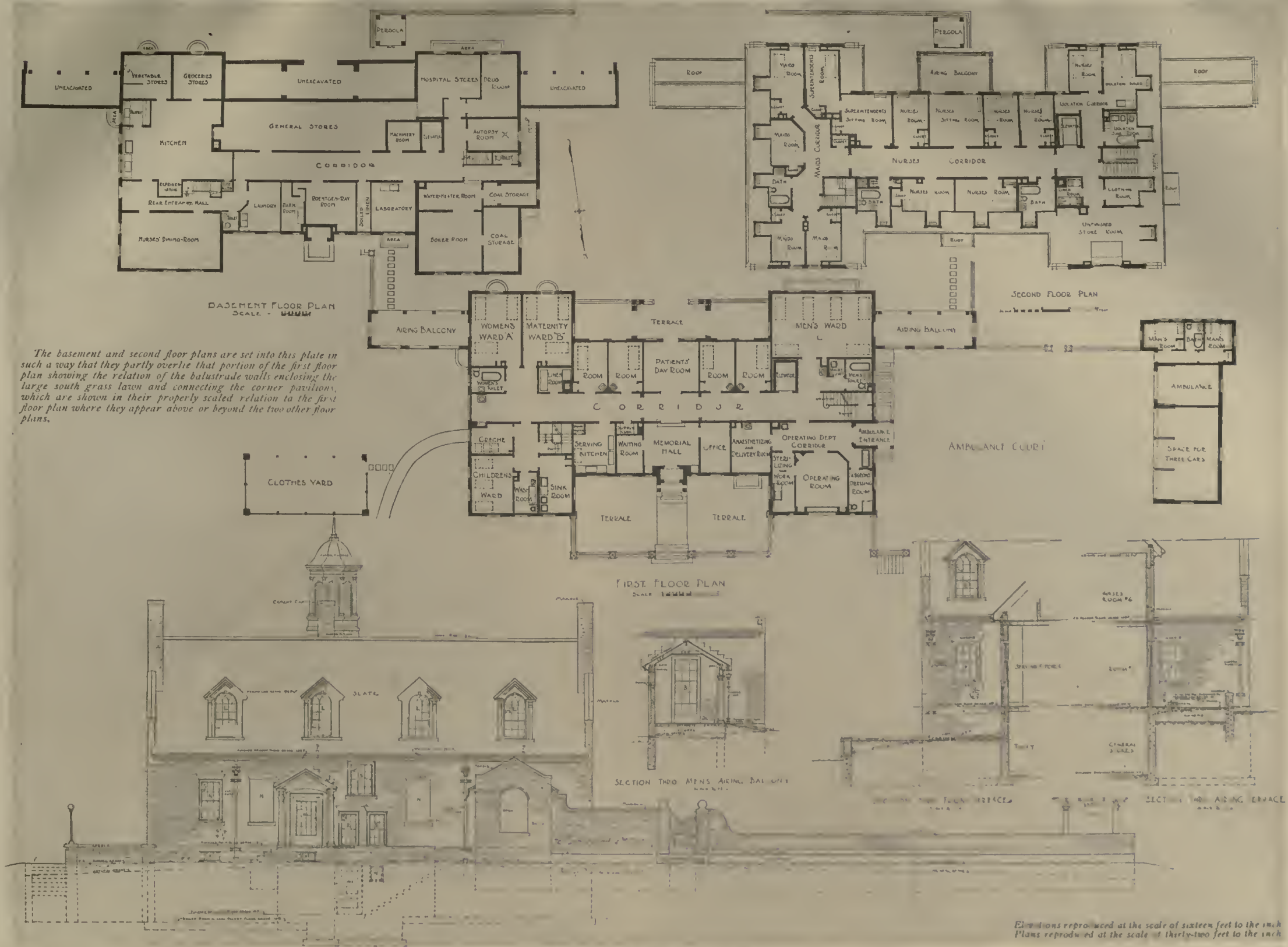
EDMUND B. GILCHRIST, ARCHITECT

Reproduced at the scale of sixteen feet to the inch

PRINCIPAL ELEVATIONS

THE BENJAMIN STICKNEY CABLE MEMORIAL HOSPITAL, IPSWICH, MASS.

EDWARD F. STEVENS, ARCHITECT; CHARLES A. COOLIDGE, CONSULTING ARCHITECT



END ELEVATION AND FLOOR PLANS

THE BENJAMIN STICKNEY CABLE MEMORIAL HOSPITAL, IPSWICH, MASS.

EDWARD F. STEVENS, ARCHITECT; CHARLES A. COOLIDGE, CONSULTING ARCHITECT

VIEW OF FRONT

TERRACE AT REAR

BENJAMIN STICKNEY CABLE MEMORIAL HOSPITAL, IPSWICH, MASS.

EDWARD F. STEVENS, ARCHITECT, CHARLES A. COOLIDGE, CONSULTING ARCHITECT

DETAIL REAR PORCH

ENTRANCE VESTIBULE

BENJAMIN STICKNEY CABLE MEMORIAL HOSPITAL, IPSWICH, MASS.

EDWARD F. STEVENS, ARCHITECT, CHARLES A. COOLIDGE, CONSULTING ARCHITECT

DETAIL OF ENTRANCE

VIEW DOWN CROSS CORRIDOR

BENJAMIN STICKNEY CABLE MEMORIAL HOSPITAL, IPSWICH, MASS.

EDWARD F. STEVENS, ARCHITECT, CHARLES H. COOLIDGE, CONSULTING ARCHITECT

EXTERIOR

FIRST PARISH (UNITARIAN) CHURCH, WAYLAND, MASS.

BUILT IN 1815

THE ARCHITECTURAL REVIEW

EXTERIOR
FIRST PARISH CHURCH, PORTLAND, MAINE
BUILT IN 1825

INTERIOR VIEW
FIRST PARISH CHURCH, PORTLAND, MAINE

THE ARCHITECTURAL REVIEW

Reproduced at the scale of twelve feet to the inch

MEASURED DRAWING OF FRONT ELEVATION
Made in 1908 by John Calvin Stevens

FIRST PARISH CHURCH, PORTLAND, ME.

BUILT IN 1825

EXTERIOR
OLD COURT HOUSE, WISCASSET, MAINE

TERRACE FRONT
BARTON ST. MARY, EAST GRINSTEAD, SUSSEX, ENGLAND
E. L. LUTYENS, ARCHITECT

VIEW OF ENTRANCE FRONT

DETAIL OF ENTRANCE FORECOURT
BARTON ST. MARY, EAST GRINSTEAD, SUSSEX, ENGLAND
E. L. LUTYENS, ARCHITECT

PLATE LXXXIV

LIVING ROOM
BARTON ST. MARY, EAST GRINSTEAD, SUSSEX, ENGLAND
E. L. LUTYENS, ARCHITECT

THE ARCHITECTURAL REVIEW

DINING ROOM
BARTON ST. MARY, EAST GRINSTEAD, SUSSEX, ENGLAND
E. L. LUTYENS, ARCHITECT

PLATE LXXXV

THE ARCHITECTURAL REVIEW

GENERAL VIEW FROM STREET

GENERAL VIEW, SHOWING REAR OF SERVICE PORTION AND PART OF GARAGES

TWO HOUSES FOR THE MORRIS ESTATE, OVERBROOK, PA.

MELLOR, MEIGS & HOWE, ARCHITECTS

THE ARCHITECTURAL REVIEW

ENTRANCE FRONT

LIVING FRONT

THE ARCHITECTURAL REVIEW

TWO HOUSES FOR THE MORRIS ESTATE, OVERBROOK, PA.

MELLOR, MEIGS & HOWE, ARCHITECTS

DETAIL OF ENTRANCE FEATURE

LOOKING FROM DINING-ROOM INTO ARBOR

PLATE CLX

THE ARCHITECTURAL REVIEW

TWO HOUSES FOR THE MORRIS ESTATE, OVERBROOK, PA.

MELLOR, MEIGS & HOWE, ARCHITECTS

VIEW FROM NORTHWEST

CHANCEL AND PULPIT

CHURCH OF THE HOLY FAITH, INGLEWOOD, CALIFORNIA

FROHMAN & MARTIN, ARCHITECTS

DETAIL OF ENTRANCE AND WEST FRONT

INTERIOR, LOOKING WEST FROM SANCTUARY

THE ARCHITECTURAL REVIEW

CHURCH OF THE HOLY FAITH, INGLEWOOD, CALIFORNIA

FROHMAN & MARTIN, ARCHITECTS

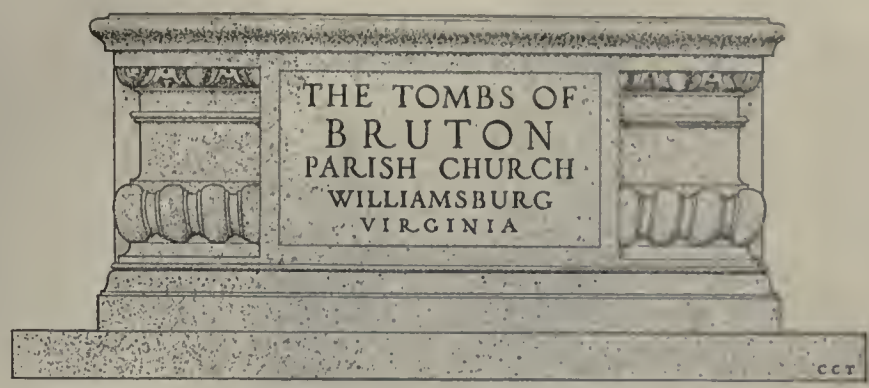
SOUTH SIDE, SHOWING SOUTH TRANSEPT DOORWAY

INTERIOR OF NAVE

PLATE VII

CHURCH OF SAINT PIERRE, AULNAY (CHARENTE-INFÉRIEURE)

THE ARCHITECTURAL REVIEW



Drawing reproduced at the scale of two feet to the inch

A Measured Elevation of the Governor Nott Tomb

By Carl C. Tallman

BECAUSE of the family and public records which they perpetuate, the older tombs of Bruton Parish Church are unquestionably of interest to the historian; while from their exceptional fitness to their surroundings and their unmistakable early Georgian characteristics, they furnish valuable material to the student of architecture.

View of Part of Bruton Church and Churchyard. Bray Obelisk at left of center tree; Governor Nott Tomb at right

Upon a motor pilgrimage over the pikes and lanes, across the fords, and through the forests of the Old Dominion, the writer eventually found his way to Williamsburg, where headquarters were established for several days. Part of the stay there was spent in tours to the mansions of the James River, while the remainder was devoted to a leisurely enjoyment of the peace and quiet of the old town.

Williamsburg has not suffered materially from modern commercialism, and the ravages of time have been thwarted by restorations; the later generations of Williamsburgers seem to have appreciated the precious heritages which have come down to them. The town therefore allows one's imagination ample sway in dreams of Colonial days. Many of the early buildings are well known, particularly the Court-House, the buildings of William and Mary College, and various houses, many of the latter having been very interestingly pictured in recent folders advertising the lasting qualities of North Carolina pine. Bruton Church has been described by Aymar Embury, II, in his book of "Early American Churches."

One finds in the churchyard many small gravestones the inscriptions of which abound in humor, pathos, and quaintness; but to the architect a study of the larger memorials is of particular interest. The well-proportioned and dignified designs, reminiscent of contemporaneous work in England, the excellent stone-cutting of mouldings and bas-relief work, contrasting with the crude inscriptions, indicate that the monuments must have been executed in the mother country, shipped to the Colonies, and sold perhaps in much the same manner that obtains today in the ready-made department of the monument business. In passing, one cannot but lament that the taste of those who create the "latest" stock patterns today does not compare favorably with the standards that maintained at the time of this early Georgian work.

The Barradall tomb is situated apart from the graveyard proper in a corner just inside the wall (built in 1752) enclosing the yard from the street. The Latin inscription fixes the date of this monument approximately as 1743. Somewhat older is the tomb of the Colonial governor Edward Nott, remarkable for its symbolism, which has been thus deciphered: Upon the side two cherubs dropping a curtain to hide the horrors of the grave, but the death's-head protrudes. The opposite side is identical. Upon the end, a knot indicating love; hangings, sorrow; the emblem of eternity in the circle, or serpent with its tail in its mouth; the emblem of mortality in the cross-bones and jaw-bones; the book of deeds; the book of life; the trumpets of the resurrection; the palm-leaf of victory and the evergreen. The other end has, in the position occupied by the emblem of eternity, on the end seen in the photograph, a winged hour-glass, emblematic of fleeting time, and below the emblems of mortality (a death's-head and cross-bones). The inscription (on the top), carved in a freehand and somewhat crude manner, will be noted as being exceptionally profuse in quaint tribute:

Governor Nott Tomb, 1706

The Barradall Tomb, 1743

(Arms)

Under this Marble Rests ye Ashes
of His Excellency Edward Nott
Late Governor of this Collony who
In his Private character was a good
Christian and in his Public a good
Governor he was A lover of Mankind
And Bountiful to his friends By ye
Sanctity of his Morralls and ye Mildness
Prudence and justice of his Administra-
tion he was Desrvedly Esteemed A
Public Blessing while he Lived & when
He Dyed A Public Callamity. he Departed
This Life the 23d Day of August 1706
Aged 49 Years.
In Gratefull Remembrance of who
se many Dutyes the Generall Assembly
of this Collony have Erected this
Monument.

A comparison of the Nott tomb and the example from Braintree, England, shows a remarkable similarity of mass design and a subtle variation of detail. The top slab of the former is of about the same width, while the length is about one foot greater than the Braintree tomb; the heights are about equal; the symbolic bas-relief on the sides is slightly different on the two tombs, as a comparison of the illustrations will show; the end panels of the English tomb are used for inscriptions in contrast to the bas-relief work of the Virginia tomb; the variation of mouldings is noteworthy.

The style of the Nott tomb is echoed in other monuments at Bruton, these being less elaborate, the mouldings plain, and the bas-reliefs omitted.

The unusual design of the Bray obelisk is thought to have been suggested by the candle extinguisher of early days, and the idea would seem to be that the light of life is extinguished. The feet, thought to be lion's claws, are suggestive of strength. On the north and south sides are armorial bearings. The inscriptions are as follows:

(East side)

Hic Depositum
Quicquid habuit Mortale Elizabetha Bray
Una cum Marito desideratissimo.
Quae languenti morbo consumpta Animam
Resignavit 22 Die Aprilis Anno 1734
Aetatis 32
Aequanimiter, fortiter, Pie.

General View of Bray Obelisk, 1734

Detail of Carving, South Side of Base, Bray Obelisk

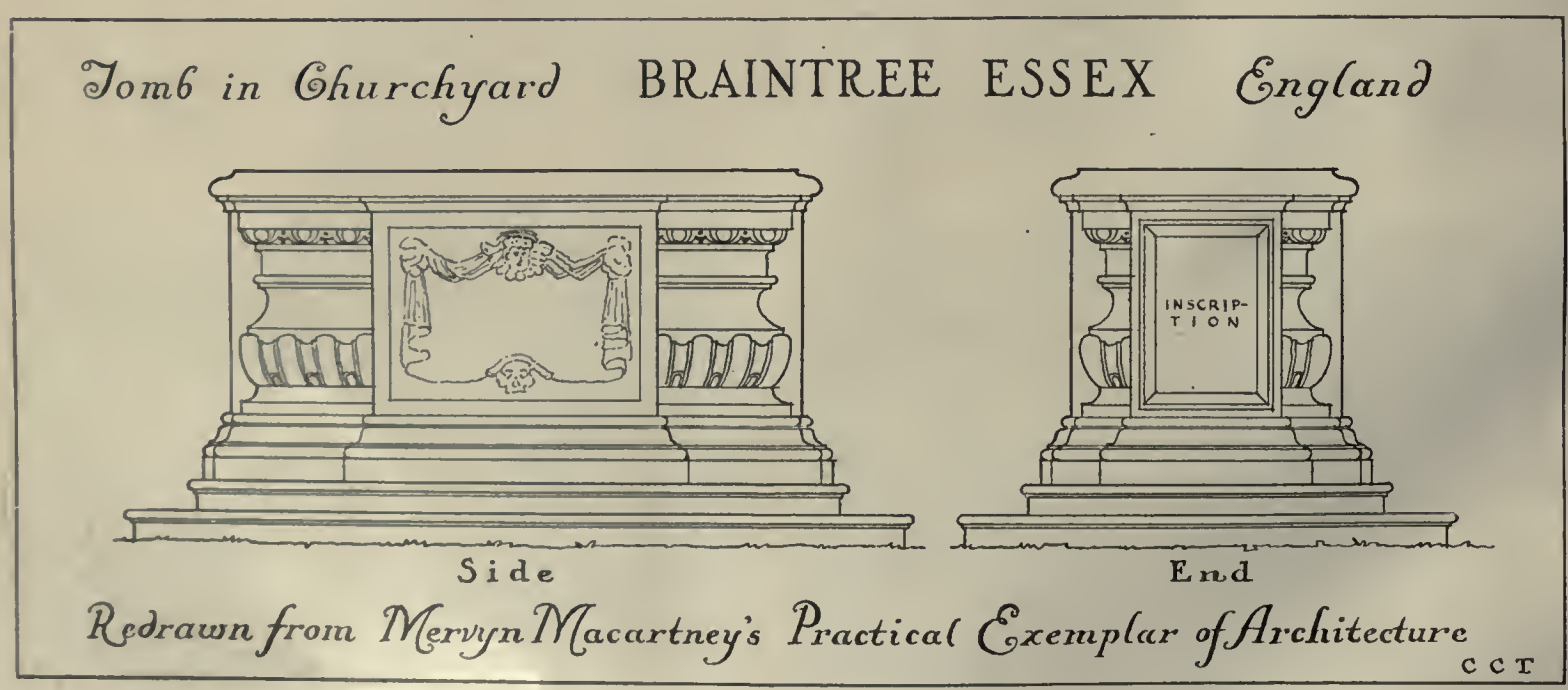
(West side)

H. S. E.
David Bray Armiger
Vir
forma Ingenio Morum Suavitate et Comitate Praetor
Serenissimo Regi Georgio Secundo
Conciliis in Virginia constitubus
Tamen ante Munus Susceptum florente Aetate
Morte abreptus
Elsabetham
Iohanis Page, *Arminger filiam Natu primam
Sibi Matrimonio conjunctam habuit
Mortuo Affectus conjunctissimam,
et sine Prote maerentem reliquit
Octob 5 1731 Aetat 32
Illa Amoris Conjugalii Extremum Pignus
Hoc Monumentum posuit
(*Error in cutting)

Mr. A. B. Bibb, in an article entitled "Old Colonial Work in Virginia and Maryland," published in Part V of "The Georgian Period," says of the Nott tomb: "The lettering of this inscription is particularly good, and the armorial bearings carved above it are rich in scrolled foliation. . . . These marbles" (referring also to the Barradall tomb) "were, of course, brought over from the old country, the work being of much too fine a quality to have been executed in the Colonies. . . . The large white marble monument of the Bray family, close by, is also imposing. The larger tombs are being cleaned and restored in a very satisfactory and intelligent way under the auspices of the lady parishioners of Bruton. Those of Nott and Bray have been lifted out of the ground into which they had partially sunk, and their carvings have been cleaned so as to reveal the beauty of the work without, however, losing the inimitable mellow tones with which old time has glorified them."

To any one contemplating a trip to this region the writer urges that time enough be apportioned for a careful scrutiny of these tombs. The resultant feeling will not be melancholy, but rather one's thoughts will be uplifted, and there will come a wonderment at the degree of refinement and culture which these pioneers brought into the wilderness.

The writer is indebted to Rev. E. Ruffin Jones, the present rector of Bruton Parish, for coöperation in gathering the material herewith presented.



Drawing reproduced at the scale of two feet to the inch

Yorkship

A New War Town for the Emergency Fleet Corporation, near Camden, N. J.

By Ralph F. Warner

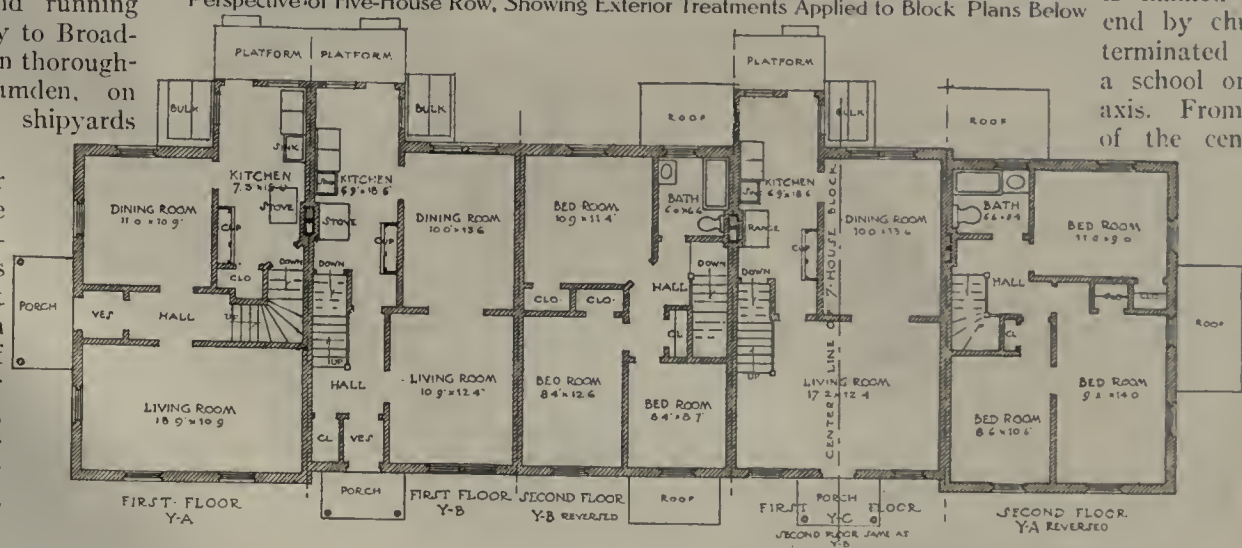
OF the new war towns to be built, in whole or in part, with funds recently provided by Congress, that in Camden, N. J., designed to serve employees of the New York Shipbuilding Corporation, is one of the first on which the actual work of construction has begun. The development is being financed out of a fifty million dollar appropriation made by Congress in February for the use of the United States Shipping Board, Emergency Fleet Corporation, whose shipbuilding program has been seriously menaced by the shortage of homes.

Yorkship Village, as it is to be named, will afford some relief for the New York Shipbuilding Corporation's employees, who now number about ten thousand, with several thousand more to be added during the year. The village will occupy a site of 140 acres, 90 of which are now being developed, lying southeast of the main body of Camden. The main entrance to the shipyards lies to the north and northwest, less than a mile distant from the center of the property, easy access to which will be had by an extension of the local trolley system. A direct road for vehicles and pedestrians will be laid out from the north side of the village, crossing Newton Creek, the north boundary of the property, and running northwesterly to Broadway, the main thoroughfare to Camden, on which the shipyards front.

The larger part of the land to be developed lies 10 to 20 feet above high tide, and is of level contour generally, broken here and there by minor dips and rises.

View Looking West Toward End of Common

Perspective of Five-House Row, Showing Exterior Treatments Applied to Block Plans Below



Reproduced at the scale of sixteen feet to the inch

Along Newton Creek are many fine trees, which add greatly to its attractiveness and afford a pleasant break in the vista to the north and east. Where the creek turns south along the west boundary of the area under development, it spreads out for several hundred feet into broad salt marshes, which cut off direct access to the west, in the direction of the Delaware. On the east is a section of about 60 acres, which is being reserved for a future development along more open and informal lines, and beyond this area are the suburbs called Collingswood and Gloucester, where are many attractive villas and small homes.

The plans for the layout of the property, and also the designs for the houses and community buildings, have been prepared by Electus D. Litchfield, architect, of New York, who desires that generous credit for assistance be given to his junior associate, Pliny Rogers. The main feature of the town plan is a central square, about 300 feet on each side, from which the major streets radiate. Around the central square three-story buildings will be erected, with stores on the first floor and apartments above. The west side of the square opens upon a broad green, or common, 125 feet wide and 450 feet long, which is flanked at its farther end by church sites and terminated by a site for a school or a library on axis. From the north side of the central square a broad boulevard leads out toward Newton Creek, connecting with a bridge and main connecting road to the shipyards, as noted above. Parks and playgrounds

are also liberally provided for on the plot development.

The plan is strongly architectural in character and affords an excellent opportunity for an effective composition of houses in terraces or rows, interspersed by single or double units. The effectiveness of axial vistas, to which the plan readily lends itself, has not been overlooked, and these are provided in a striking manner, as a glance at the layout will show.

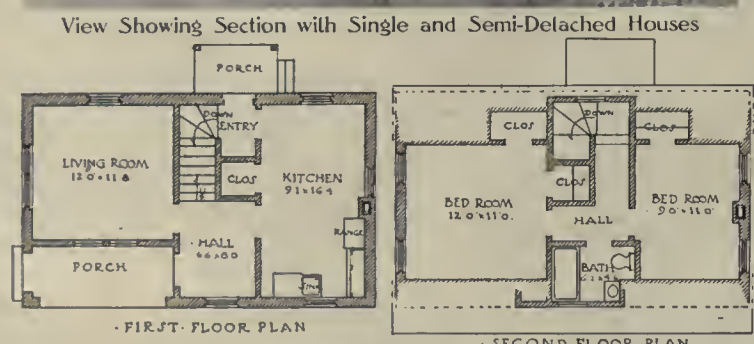
Streets are laid out, for the most part, with a width of 50 feet, with roadways 18 feet wide, grass strips 9 feet, 6 inches wide, and sidewalks 4 feet wide. A few streets are of greater width where a concentration of traffic is to be expected. Alleys 10 feet wide are provided on the interior of all blocks.

Lots are given a depth of 70 feet, following the tendency to shallow lots in the Philadelphia district. This arrangement has, however, advantages and disadvantages. The principal gains are in reducing the cost of the unimproved individual lot, which in this instance was relatively high, and in cutting down the size of the rear yard, which the tenant must maintain — a space which, when excessively large, frequently becomes an eyesore in a development of this type.

Lot widths in general are 14, 16, and 18 feet for interior lots in the several group plans, with wider lots at the corners. For semi-detached houses, lots are 35 feet wide, and for detached houses a greater width, running to as much as 60 feet. Setbacks from the street line are generally 15 feet. Typical houses range in depth from 22 to 28 feet, so that rear yards are 27 to 33 feet deep. This arrangement gives 80 feet between the fronts of opposite houses, and from 54 to 66 feet between the rears of houses in the same block.

Gas, electricity, and water mains, as well as sewers, are to be provided on all streets. Concrete roadways, curbs, and sidewalks will be constructed. The development cost per lot will be based upon an average of about ten houses to the gross acre, which the layout provides.

View Showing Section with Single and Semi-Detached Houses



Reproduced at the scale of sixteen feet to the inch

Floor Plans of House P, Shown Above

Nine hundred and seven houses are to be erected in the first development of 90 acres — providing accommodations for 4,500 people. Of the total number of houses 23 are detached, 63 semi-detached, and 821 in groups of from 3 to 11 houses. There are in all twenty-three different exterior designs for houses — some with the same or slightly modified floor plans. There are five designs for detached houses, three designs for semi-detached, seven for end houses in group arrangements, and five for interior houses in rows or groups. Additional side elevations are given for each of the latter, which permits of their use as end houses in groups. There are also three designs of houses with angular plan, adapted to use in a row or group in which the façade is to be bent or deflected, forward or backward, forty-five degrees in either direction.

The dominant note in the architectural style is a simple Colonial motive, with houses, for the most part, of brick, on a rectangular plan, and roofs — single pitch, gable pitch, gable-ended, interspersed with hipped, flat, and combined gable-and-pitch roofs. There are two designs of four-room detached houses of the English cottage type with undercut porches — one with gabled roof and dormer windows, a story and a half in height, less happy in its proportions than some of the other types. In the detached houses the gable end is turned toward the street in three designs out of five; in the semi-detached type a gable motive on a pitched roof shows toward the street in one of the two types; and in the groups various combinations have been made in which the roof-line is successfully broken by gables on the end houses, with pitched roofs, relieved by gable motives, on some of the interior houses. An interesting and instructive feature of the work is the

Type	Symbol	No. Rooms	Front Dimensions	Side Dimensions	Remarks
			FOUR-ROOM HOUSES		
Detached	O	4	25′ 8″	16′10″	Hall and stair in middle. Room on either side.
Detached	P	4	18′ 0″	30′ 0″	1½-story house with steep gables and dormers.
Detached	Q	4	16′10″	25′ 8″	Plan similar to P, with different arrangement of bath and hall.
Row-end House	R-A	4	19′ 1″	25′ 3″	Same general plan as Q.
Row-end House	R-D	4	16′10″	24′ 9″	Same plan as R-C.
Row-Interior (or End)	R-B	4	14′10″	22′ 3″	Intermediate plan.
Row-Interior (or End)	R-C	4	16′ 0″	24′ 9″	Compact plan.
			SIX-ROOM HOUSES		
Detached	K	6	19′10″	24′10″	
Semi-detached	S	6	20′ 0″	30′ 0″	Plan similar to L, except bath is over kitchen.
Row-end House	Y-A	6	20′ 0″	28′ 0″	Gable toward street.
Row-end House	Y-A-D	6	20′ 0″	28′ 0″	Same plan as Y-A. Flat roof.
Row-end House	Y-A-F	6	20′ 0″	28′ 0″	Same plan as Y-A. Full gable at end.
Row-end House	Y-A-G	6	20′ 0″	28′ 0″	Same plan as Y-A. With small gable at end.
Row-Interior (or End)	Y-B	6	18′ 0″	28′ 0″	Intermediate plan.
Row-Interior (or End)	Y-C	6	18′ 0″	28′ 0″	Central plan, entrance at middle.
Row-Angle House....	T	6	Five Sided		Used in turning interior angle in group arrangement.
Row-Angle House....	W	6	Five Sided		Used in turning exterior angle at corner, etc.
			SEVEN-ROOM HOUSES		
Semi-Detached	L-N	6-7	25′ 1″	21′ 9″	Bath "L" type not over kitchen. N type same as N detached.
Detached	N	7	27′ 6″	22′ 0″	Compact.

Tabulation of Types of House Plans in Yorkship Development

method followed in the development of elevations for the groups, to secure variety without unduly increasing the number of designs for individual façades.

In order to study the possible combinations of the several individual row-house units designed in the same style, but separately, the architect has used a set of cardboard elevations, drawn to scale, of the fifteen designs of end and interior houses, and experimented with these in various ways to obtain possible group arrangements. In this way fifty-six different types of elevations for the various groups of from three to eleven houses were obtained, similar to the group reproduced on page 91. Further, the studied distribution of the semi-detached and single houses among the rows or groups greatly enhances the charm of composition in the street pictures throughout the property.

Reproduced at the scale of sixteen feet to the inch

Front and Side Elevation, House Type S
Floor plan identical with Y-B and Y-B Reversed

Details of doors, windows, and porches are carried out in harmony with the general style adopted, painted white, and made to order at the mill in quantity from the architect's designs. The several types of front, rear, and side porches or entrance ways, with their variations in detail, add greatly to the variety, interest, and charm of the development.

Of the total of 907 dwellings, 302 are of four rooms, 583 are of six rooms, and 22 of seven rooms. The four-room dwellings have dining-room and kitchen combined, with living-room on the first floor, and two bedrooms and bath on the second floor, and are provided both in detached and row houses.

A summary of the houses, divided into groups of four, six, and seven rooms, is tabulated separately on the preceding page.

An analysis shows how the entire development is based upon six different floor plans, of which the base plans are K; L; N; O (the second floor a variation of the K scheme; and P, being a variation of the first floor, the second floor further varied by the roof); R-B (only the first floor is a new arrangement, the second floor being the same as the sixth plan, S); S (of which Y-B and Y-C are repetitions for a block). The floor plan of O is utilized again in Q, R-C, R-D, and R-A; with Y-A and Y-A-M as similar variants of the R-A plan — the second floor of the latter being also similar to Type N. There are, besides, two sets of inner and outer corner plans (with two "reversed," or four in all), accompanied by three sets of elevations.

These six principal floor plans and nine variants receive seventeen sets of exterior elevations. The quarter-scale drawings for the whole series go on forty-nine sheets, of which twenty-nine carry sets of three floor plans,— eleven being the regular types "reversed," leaving twenty sheets for various elevation treatments; with occasional minor variations of the window arrangements or roof slopes appearing over the floor plans or above the elevations.

All houses have cellars with hot-air furnace; wash-tubs and dressers in the kitchen; electric lights and gas, and complete bath. Independent communication to the stairway and bath is had from all rooms. In general, the floor plans are compact and show an economic distribution of the area for living-purposes.

The houses are of brick with nine-inch walls. A small portion of the houses are of stucco, and one or two of frame. Eleven million bricks are being used in the operation.

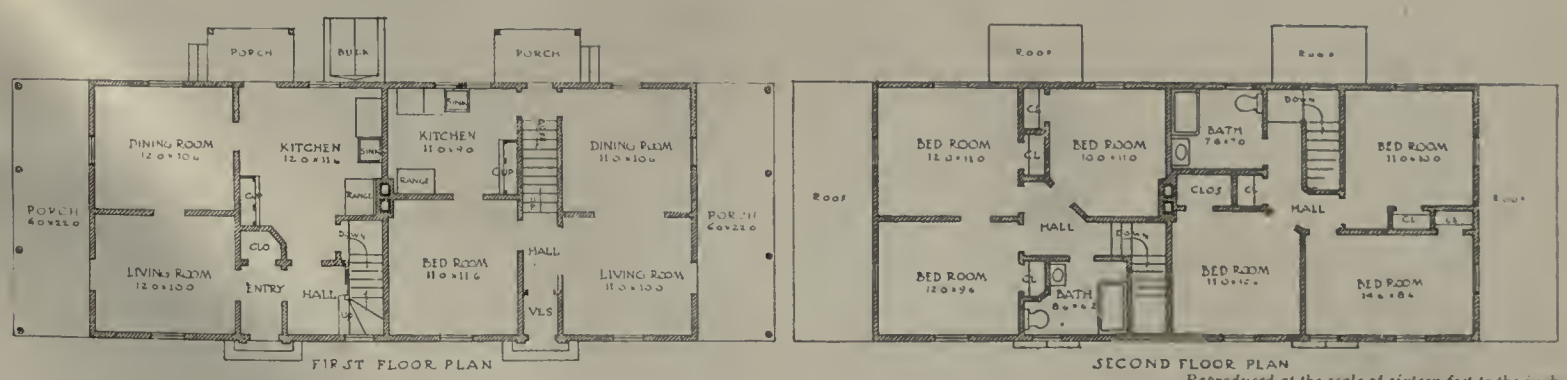
The average estimated cost of the houses at the time of planning—in midwinter—was $2,700. This figure was for the structure alone, and takes no account of the cost of lot, streets, sewers, and other public utilities.

The contracts were let in the latter part of April. The total cost of the houses alone will range between two million and two million and a half dollars. The cost of laying of street improvements will amount to approximately a half million dollars.

The city of Camden, with which the new town will be incorporated, is all ready to spend over $300,000 in building school-houses, fire stations, and other necessary municipal equipment.

Under an agreement by the Fleet Corporation with the Shipbuilding Company, the Government has loaned money at five per cent for financing the development. The New York Shipbuilding Company, however, owns the land, and has organized a subsidiary, the Fairview Realty Company, to construct and manage the development, which company will rent or sell the properties upon their completion, the income being applied on the Government loan after deducting interest and fixed charges.

Two years after the war the Government can, at its option, order an appraisal of the properties, and readjust both rents and selling-prices. The difference between the actual cost of construction and this peace-time revaluation may be borne by the Government as part of the necessary expense of the shipbuilding program.



Reproduced at the scale of sixteen feet to the inch

Floor Plans and Principal Elevations of Double House, Types L and N

Government War Housing. Part II

Continuing the Report of Events for the Month of May

The Urgent Need of the Present Situation

THE necessity of providing adequate housing in order to obtain a permanent labor supply for war industries and manufacturing purposes requires no argument to convince the professional reader. It is only important for any one to realize that most of these industries have developed in communities where the housing provided by private enterprise had been constructed solely to meet pre-war conditions. It is further only necessary to understand that many other important industries — such as the powder plants and most of the new shipyards — are located on virgin sites; often far removed from all pre-war villages and existing communities.

Transportation No Solution of the "Housing Problem"

Next, it requires to be shown that it is impossible "to solve the housing problem" by providing transportation to connect factories and yards with existing housing centers; for the reasons that, generally speaking, such "housing centers" are *non*-existent, or — if available at all — are not within a possible radius.

It should also be obvious that it is not feasible to provide transportation of sufficient capacity to convey 16,000 men to the plant, and take them away again, at the identical minute at which their work begins and ends; nor to supply trackage to connect with all their necessarily scattered and existing living points; and, finally, it should be recognized that the best workmen will not be satisfied to continue permanently to expend an hour or over daily in traveling back and forth to their work!

It is difficult to find skilled labor willing to do this — even on temporary construction work, when paid for the time thus expended. It is certainly not to be expected of high-class labor, employed in permanently established plants. Even if transportation can temporarily *help* in solving the problem, it can do no more, at the best, as the problem is on too large a scale to be capable of complete solution in this fashion. While it is the best natural solution to allow the laborer to live near enough to walk to and from his work, it is the more absurd to undertake the constant cost of a transportation service for this purpose, as it remains a permanent (and entirely unnecessary) tax on the industry, from which no adequate income can ever be estimated.

Accepting these facts, and realizing that these war-production plants can*not* become effective for the purpose for which they were built, without laborers — in *great* numbers — to keep them in action, it should appear obvious that the machinery necessary to provide this labor (comprising from 60 to 75 per cent of the final cost of the product) is *quite* as essential to be supplied as the machinery necessary to aid that labor — after it has been secured in fabricating and handling the required material!

The New Importance of Labor in War Success

This world waris a war of organization of industries and resources; and, for the first time in the history of the United States of America, we are faced with a shortage of labor — or man power — great enough to *reduce* the output from our huge natural resources so as to delay, or even to imperil, its successful outcome!

To follow this argument to its logical conclusion, it must be recognized that we are for the first time faced with this new factor in the manufacturing problem, a factor that is strange to the conservative pre-war type of business mind; and, at the same time, this war is bringing new experience to labor,— already organized and newly intelligent,— calculated to make them realize their own value and power — for them proven finally, and most conclusively, in the present *in*conclusive debacle of the Bolsheviki in Russia.

Certain points important to the problem have already been sufficiently established to be now accepted as fixed and final.

First. Workmen will *not* live in temporary housing barracks and remain contented, efficient, permanent laborers.

Second. They will *not* endure to travel an hour or more, in addition to working eight hours — often ten hours — the day!

Third. Large rentals, occasioned by scarcity of living accommodations, mean only an inevitable *further* increase in wages to meet them — and thus introduces another unnecessary, and probably permanent, tax on the cost of the finished material!

The Second Housing Appropriation Still Delayed

Since last month's issue was printed, the bill authorizing a second housing appropriation, of $60,000,000, has passed through Congress and been signed by the President; the additional $10,000,000 being added to provide housing in Washington for department employees. It is now the expectation that the President, to whom authority is given for expending the appropriation, will delegate that authority to the organization already perfected by Mr. Eidlitz, under the Department of Labor. So far as is known up to the moment of writing, the actual money authorized by the original bill has not yet become available; although the authorized appropriation is being tentatively allotted and preliminary working studies in some instances have been started under the Labor Housing Board.

Further Changes in the Shipping Board Housing Bureau

The same month has seen the Housing Department of the United States Shipping Board, Emergency Fleet Corporation, merged into the "Department of Transportation and Housing." This arrangement appears to set aside Mr. Flannery, originally head of the Housing Department, as Mr. A. Merritt Taylor, formerly director of the Transportation Department, continues at the head of the reorganized bureau.

Other changes or additions to the organization include Mr. A. W. Smith, of Philadelphia, as chief executive; Mr. D. Everett Waid in the place of Mr. Alexander Bing, with Mr. E. J. Russell as assistant, and Alexander Mackintosh, of Brooklyn, Eugene S. Klein, of St. Louis, F. Mathesius, Jr., of New York, Walter T. Karcher and John W. Ritchie, Philadelphia, as local inspectors.

A List of the Housing Developments Thus Far Authorized and Allotted by the Department of Housing and Transit of the United States Shipping Board, Emergency Fleet Corporation

PHILADELPHIA, PA.— American International Shipbuilding Corporation. Owen Brainard, Archt., New York, N. Y.

NEWPORT NEWS, VA.— Newport News S. B. & D. D. Co. Francis Y. Joannes, Archt., New York, N. Y.

CAMDEN, N. J.— New York Shipbuilding Co. Electus D. Litchfield, Archt., New York, N. Y.

SPARROWS POINT, MD. (St. Helena & Dundalk). Bethlehem Shipbuilding Corporation. Edw. L. Palmer, Jr., Archt., Baltimore, Md.

PORTSMOUTH, N. H.— Atlantic Corporation (Atlantic Heights Development). Kilham & Hopkins, Archts., Boston, Mass.

CHESTER, PA.— Sun Shipbuilding Co. Ernest Flagg, Archt., New York, N. Y.

CHESTER, PA.— Chester Shipbuilding Co. Archts.: J. Edwin Brumbaugh, Chester, Pa.; Simon & Bassett, Philadelphia, Pa.

LORAIN, OHIO.— American Shipbuilding Co. Abram Garfield, Archt., Cleveland, Ohio.

BATH, ME.— Texas Shipbuilding Co. R. Clipston Sturgis, Archt., Boston, Mass.

WILMINGTON, DEL.— Bethlehem Shipbuilding Co. Ballinger & Perrot, Archts., Philadelphia, Pa.

BRISTOL, PA.— Merchant Shipbuilding Corporation. Carrol H. Pratt, Archt., Bristol, Pa.

GLOUCESTER, N. J.— Pennsylvania Shipbuilding Co., New Jersey Shipbuilding Co. Bissell & Sinkler, Archts., Philadelphia, Pa.

ESSINGTON, PA. (South Philadelphia, Delaware County, Pa.).— Westinghouse Electric & Mfg. Co. (The South Philadelphia Company). Clarence Wilson Brazer, Archt., New York, N.Y.

JACKSONVILLE, FLA.— Merrill-Stevens Shipbuilding Corporation. H. J. Klutho, Archt., Jacksonville, Fla.

PORT JEFFERSON, L. I.— Bayles Shipyard, Inc. Alfred C. Bossom, Archt., New York, N. Y.

The First Parish Church, 1814, Wayland, Mass.

Mr. Andrews Palmer, of Newburyport, Architect

It happens that, through the interest and research of Mr. Alfred Wayland Cutting, a member of the congregation, more information than is usually obtainable in regard to the smaller New England Parish Church is known about the history of this structure. We are therefore printing a résumé of the facts, and including certain excerpts from Mr. Cutting's "Hundred Years of the Old Meeting House," an address given on the anniversary of its dedication.

THE present church structure at Wayland is the fifth to serve that purpose in its community. The three earliest structures, dating from 1642, 1652, and 1686, stood in the old graveyard on the Sudbury Road, which was the center of the first settlement, then known as the Sudbury plantation. The parish was divided in 1725; and in 1780 the original portion, east of the River, was set apart as East Sudbury, the name being changed to Wayland in 1835.

The first meeting-house, "30 foot long, 20 foot wide, and 8 foot stud, with 6 windows, two with 4 lights and four with 3 lights," was a "mere log shelter with roof thatched with meadow grass, having no floor but the earth." The second, built in 1652, was similar, but ten feet longer.

The third structure (built in 1686) was removed to its new location on the old common in the present center in 1725, and there rebuilt. "The meeting-house, a large, square, weather-beaten building, without tower or chimney, resembling the 'Old Ship' at Hingham, stood close to the road, a large sycamore shading its pulpit window. A horse-block by one of its doors — it had entrances on three sides — was used by the parishioners, who, coming to church on horseback, often with a pillion behind for wife or daughter, could here easily mount or dismount. Inside, the square pews, with high partitions surmounted by little balusters, the seats for the austere-looking deacons beneath the high pulpit, with its over-hanging sounding board,— with the massive galleries, constitute the picture of this old church, whose frame still survives in the house of Mr. W. A. Bullard."

When the present church was finished, in 1815, the old church building was sold to Luther Gleason and Jonathan Heard "on the condition that they construct from the old material a building which should contain a hall for the use of the town for municipal purposes for thirty years." This room, existing today in the Bullard House,— formerly the Old Green Store,— was Wayland's first town hall. The house itself, much defaced by added pseudo-Colonial ornament and decoration in the taste of the eighties, stands near the church, facing across the church green.

The present church building was therefore the first edifice used solely for religious purposes. Previously, as was the custom in the English parish, the interior was also a meeting-place for discussing the secular affairs of the community. It was also the first meeting-house built with distinct family pews — its predecessors providing sittings for the men and women on different sides of the church. "The children and servants, and earlier the slaves, had their places also, usually in the gallery, where they were kept in order by the tithing men. As late as 1782, a note in the records indicates this feature still continued.

"On June 1, 1814, all able bodied men of East Sudbury (given 824 inhabitants in the Census of 1810) were notified the frame of the church was ready for raising. 'Raising bees' were recognized functions in the community."*

A contemporary description of the edifice may be of interest:

"'This meeting-house stands at a short distance from the former; on a rising ground, of easy access. It was located by unanimous vote of the town; a majority who were in favor of rebuilding on or by the same spot, consenting to a proposition of the minority. The dimensions are, length 54 feet, width 51½ feet, height to eaves 30 feet. A handsome projection in front, 34 x 8 feet, is entered by several stone steps, guarded by an iron balustrade. The cupola rises to 110 feet, in which is a good bell, weighing 1019 lbs. Both the exterior and interior display much taste. The architect was Mr. Andrews Palmer of Newburyport, and the cost of the building was about $9,500.'

"The exterior of the church, with two exceptions, remains exactly as drawn by Mr. Palmer in 1814. The clock was added in 1850, and at the same time the windows on the sides were changed to conform with the interior requirements. The ancient arrangement of windows can be seen now at the rear . . . on the outside, where the old frames have never been disturbed.

"These side windows formerly had only the two upper sashes. The third, or lower sash, was added after the removal of the galleries, thus lengthening the windows; the lower windows, now in the vestry, being shortened one half by removing the upper sashes.

"The bell was cast by Paul Revere in 1814. . . .

"The new church of course lacked its present setting of elm trees. These were set out in 1827."

In the reconstruction of 1850 the seating capacity was reduced certainly a third. "A desire for a parish room or vestry led to the building being made two storied, by the removal of the galleries and the construction of a new floor, eight feet above the original one. The gallery columns were sawed off flush with the old floor, where the stubs may be seen today. All the windows on the rear wall were lathed and plastered over, and the walls frescoed to represent imitation panels, pilasters, and alcoves, all in a dull slate color. The old white pulpit was relegated to the basement, and its slender supporting columns and winding stairs destroyed. A new pulpit of mahogany veneer was installed, behind which was placed a neat horse-hair covered sofa. Behind this was frescoed an imitation alcove some ten feet high, with a large cross apparently before it, casting its shadow behind on the apparently curved wall of the alcove; very well done, a complete deception. The white woodwork of the reconstructed pews was 'grained' in imitation of hard wood. The outside of the church was painted, blinds and all, a uniform cheerful drab.

"Originally the whole space, except the vestibule, was one room, the floor level with its three entrance doors. Entering the church we should have seen a lofty apartment with its pulpit before us, this same one we now see, except that it stood high on six slender fluted columns and was reached by gracefully winding stairs with rails, on either side. Behind it was the window, exactly as it is now. [It was restored in 1898.] On this rear wall were eight other windows (four on each side — two above and two below), making nine in all. The lower four of these, cut down to half their former height, now light the rear of the vestry. A gallery extended around three sides of the room, supported by fluted columns twelve feet high. These galleries were unusually wide, covering a large proportion of the floor pews, much like the galleries of our present-day theaters. The pews were the square pews, so called, entered by a door from the aisles, with seats on three sides, so that nearly one half of the audience sat back to the minister. The seats were narrow and unpainted, and fitted with hinges, so that the close of a hymn was marked by a clattering of falling seats all over the church. Cushions were unknown. The present pews were made out of the old ones, and the hinges are still in place, though now immovable. The woodwork was white, with mahogany trimmings.

"In 1898 a restoration of many of its former interior features was made, as we see them today. The dismal drab color of the exterior was restored to its former beautiful white and green. The dull yellow dome of the tower was gilded. A fine new Howard clock . . . later replaced the irresponsible vagaries of the old one.

"The shingles nailed on the tower and front porch in 1814, when removed in 1914 to be replaced by sheet copper, were, except for splitting and weathering, found to be perfectly sound."

*Rev. John Burt Wight, who died in Wayland in 1883, at the age of ninety-three years, wrote in his "Reminiscences," preserved in manuscript form in the town library, referring to the building of the church: "An able committee was appointed, and a skilful, experienced builder obtained. A beautiful plan was adopted, and the people were spirited and liberal in furnishing the requisite materials. The master workman was ambitious to surpass any similar building he had erected, and the result was a success very gratifying to the inhabitants, and highly praised."

Mr. Wight also states that this event of the raising was only one of several such gala days connected with the building. He mentions the laying of the foundations, the erection of the tower, the finishing of the interior, and the raising of the bell as being celebrated in the same manner.

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IF it is possible to foresee any results that will follow the war with ultimate certainty, it would appear inevitable that radical readjustments in labor prices will have to be made — in certain trades at least — when present pressure ends. In those special manufactures associated with the trade of war, the labor which was at one time cheap in the mills, and has now gone into munition manufactures at greatly increased prices, must lose some considerable part of its present temporary trade value. Yet it is at the same time probably equally certain it will not again descend to the low wage prices paid before the war!

Those firms concerned in metal working, for instance, before cutting down their pay-roll, will undoubtedly make every possible endeavor to find some new outlet for their manufacture for which there will exist a permanent demand under future peace conditions of the country. Some firms will succeed; others will fail in this endeavor. But, though the scale of labor payment, because of the cessation of the present inevitable demand, will probably somewhat decline; on the other hand, any relief that might be experienced by the mines and iron furnaces, for instance, will not be immediately felt, as there is every expectation that they will be able to continue to run for some time on the surplus of construction orders that may meanwhile have accumulated — having been delayed or held up by more immediate and pressing demands for war material and supplies.

The steel fabricating plants will then undoubtedly endeavor temporarily to cut down their retail prices on iron and steel to as close a margin as possible — in order immediately to find a new outlet (or revive and increase an old!) sufficient to take up the greatly enlarged facilities that have been developed for their product by the war. This tendency will at once be partly checked by the labor situation, which it will be expected will be such as will economically serve to counteract that tendency, — except in so far as special labor values in these trades will be somewhat shrunk by the change of economic conditions, — and therefore any anticipated possible decrease in the retail price of metal will have to be cut principally from their present temporary excess of "war profits."

FOR the architectural profession, at least, the moral is clear and definite. With the exception of steel, and of certain articles, required principally in the installation of plumbing and heating, and in building hardware, there will be little, if any, great depreciation that can be anticipated in building costs! Skilled labor will certainly remain at least as scarce and as expensive as it is at present — and there is *every* probability that it will even considerably advance before the war's end; and it is undoubtedly labor that will then, as now, principally affect the costs of masonry, carpentry, finish work, and most of the other manufactured material that enters into the construction of buildings.

Many of these building materials will also probably naturally advance in price, even if there at first exists no increase in demand to affect their previous retail cost. This increase in demand, however, is almost certain to be felt in most of the construction trades. It will inevitably result in the larger building projects, which are at present difficult or impossible because of freight and transportation difficulties and the Government demands that make it practically impossible to assemble the metal essential to their framework and construction.

IN all those classes of building which have been affected, the tendency after the war will be to "speed up" sufficiently to counteract and overcome the recession in construction which will have occurred during the war period. This always results from the mere natural operation of the "law of average;" which normally means that any period of building depression is inevitably followed by a period of increased building construction, at least as long and as strenuous as the period whose deflection of the curve of progress it struggles to restore to its true arc. War being an abnormality, however, we cannot yet be certain exactly how the "law of averages" may be affected by its rude interruptions of the normal progress and development of the race. Yet hardly anything in life is more certain than "marriage and giving in marriage" — saving only the mysteries of life and death, with which it is so closely interlocked.

And so homes for the newly resolving family groups *must* continue to be found; although it is true that great changes in the centers of population may again result in the reconstruction period that will follow the war's end. It is even possible that our total of family groups may be seriously reduced by deaths, disease, sickness — and even by emigration overseas! If nothing worse follows, it may mean at least a marked slowing up, or deflection, in the curve of progress, that will probably be felt more critically in some sections than in others.

Certain towns in New England there are — and many of them! — that were flourishing and promising centers of local industry at the outbreak of the Civil War, that have never survived the drainage and permanent loss of their best blood caused at that time. Today they have fewer buildings and fewer inhabitants than they then had. In many cases this was partly because their men found other places — with better business opportunities — available at the end of the war and so never again came back to their old homes; and this experience may well recur again, under the probable tendency of history to repeat itself, at the conclusion of *this* world debacle!

IN the department of residence construction and design, it will be necessary not only again to catch up with and equalize the losses occasioned by the previous depression in building structures of this class, but it will also be necessary to overcome the losses occasioned by war conditions — as well as the sudden increases of costs which have immediately operated to hold back present construction of this character. This unusual twofold combination will undoubtedly serve much to strengthen and maintain prices of materials and labor in these trades that will be affected, and so combine to make it difficult to obtain the same requisite grades and characters of material at any noticeable reduction from the present existing rate. Certain communities will require more houses — others less — as conditions following the war will slowly seek to revert again to the accustomed levels and channels of peace times.

But as to the present "high costs of building" — well, *they* have probably come to stay! And so, Mr. Architect, the sooner you can bring your clientage to understand — with you — the basic economic factors on which these items rest, and by which they are moved, the better it will probably be for *your* business, and for *all* business, in the days most immediately to come, as well as those that will ultimately arise, in their turn, to follow after them!

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